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VOL VII JANUARY, 1908 No 1

The Campaign for Medical Legislation—Its Probabilities for Success

By R. B. NEWCOMB, M. D., LL. B., Cleveland, O.

The coming session of the seventy-seventh General Assembly of Ohio, which convenes in January, 1908, will have before it for consideration several measures directly affecting the interests and welfare of the medical profession. The legislation to be undertaken should be vigorously backed by every medical organization in Ohio. That such legislation is needed need not be discussed or argued here; that it is wholesome and will operate to the great benefit of the public can not be denied; that it will be opposed by selfish and even dishonorable interests is certain. However, many a salutary measure has been frost-bitten in the Senate and House Committees because the opposing influence of selfish interests predominated. The important question, therefore, is not so much the merit of these measures, for no fair-minded legislator, exercising even ordinary decency, should offer any opposition. The real issue is how to counteract the subtle influence of hostile interests.

The proposed legislation relates:

1. To the regulation of the manufacture and sale of proprietary medicines within the State; to secure for Ohio the full benefits of the provisions of The National Pure Food and Drug Law.

2. To the creation of the office of the County Medical Officer of Health.

3. To the amendment of the law on criminal abortion.

4. To the prevention of advertisements, in the public press, of cures of venereal and sexual diseases, and other flagrant medical frauds.

5. To the registration of vital statistics.

Read before the Academy of Medicine of Cleveland, November 15, 1907

6. To the re-establishment of local boards of health for cities, on the merit system, as provided by the code of 1902 before amended in 1904.

7. To the appointment of all public medical officers from nominations made by the State and County Medical Societies.

8. To the amendment of Section 1536, 730 R. S., so as to limit the legal publication of the rules and regulations of health authorities to their titles.

It can hardly be expected that all these measures will be enacted into satisfactory laws during the coming session. How many of them will be successful depends largely upon the intelligent activity and vigor of those upon whom the responsibility rests. The law-making body of Ohio in the past could never be charged with generosity towards the medical profession. Only in recent years have any measures of vital interest to physicians been favorably considered by the legislature. Prior thereto no organization of sufficient power existed to carry with it force and conviction at Columbus. When medical men have appeared before legislative committees they have been suspected and even accused of having some selfish purpose. Legislators grow so accustomed to the motives of lobbyists that it was difficult to understand how any doctor could possibly advocate the passage of any Bill that not only could not benefit him pecuniarily, but the operation of which would be absolutely hostile to his interests. Dr Robbins, of Chillicothe, in a recent address said:

"We are constantly demanding legislation which we know will rob us in a very large measure of our opportunity to realize by our profession and to accumulate a portion of the wealth of the land."

I believe it may be safely asserted that every law upon the books today, whether State or Federal, that has for its purpose the promotion of health and the prevention of disease, has not only been favored by the medical profession, but has received its active and energetic support.

So many interests are seeking to secure the enactment or repeal of laws solely for private gain, and to that end maintain paid lobbyists to work for the success or defeat of nearly every important measure, that it is peculiarly refreshing to find the medical men of the State advocating measures that tend to promote the welfare and wellbeing of the community by improving the general health, even though it may injure active and lucrative practice. The real purpose of it all is to bring the physician into a larger sphere of usefulness in his relation to the public and to elevate the medical standard, by eradicating, through the medium of wholesome legislation, those methods which tend to throw discredit and disrespect upon the profession. Singular though it may seem, even those measures that are designed to benefit a purely professional purpose, and might even be subject to the charge of having back of them a selfish motive, really operate to promote the public good. The laws of Medical Registration and Examination, while purporting to benefit the profession by raising the standard of requirement, in fact produce salutary results, wherein the community enjoys the larger share. Such legislation means, for the future, men better trained and stronger brained, and that should mean better health and longer life. Any movement that tends to uplift the medical profession and bring to its members the dignity of a universal public esteem, is a force for good to the public as well as the physician. The profession is respected according to its average. To raise the average, to strengthen the ethics, to broaden and develop the personnel, that is the simple duty of every doctor who has dedicated his life to a noble calling. The results of his effort are his best reward. For by his influence and power the average has been raised, and the layman unconsciously feels, not alone a greater respect for the medical profession, but a respect that oft-times borders on reverence.

The respect that legislators are bound to have for the medical fraternity, especially when engaged in securing wholesome reforms, is the best warrant of success. If it is wrong for the people to be preyed upon by charlatans who advertise, and be duped by the vendors of nostrums, then relief can only be had through the cooperation and effort of the medical fraternity. There are many members of this Academy, known widely for their unselfish devotion to matters affecting the public health, who would exert a very powerful influence in moulding legislative policy, and whose appearance before legislative committees would undoubtedly result in the recommendation of any Bill, that sought to provide for the general health and welfare, or elevate the medical standard. The past decade has witnessed many important reforms of genuine value; but they owe their existence to the untiring efforts of some of the best men in the profession. Magazines and newspapers have entered the fight against quackery, patent medicines and medical advertising. It is a recognition of the fact that the medical profession can not be commercialized, and newspapers that encourage advertising quackery, not only do harm in that their publications are the medium through which money is mulcted from ignorant sufferers, but they can not be blind to the fact that they are harmful, and not one of them could offer a plausible argument in its favor. Some publications that blat about the public morals and smear an entire editorial page with their puritanical opinions, eagerly grab the tainted money that comes from fraudulent "dope-vendors." Happily, the Cleveland newspapers contain far less of this sort of advertising than formerly. It may be that the "dope-peddlers" and the cure-alls have suffered reverses because they can not bear the light that has been recently thrown upon them. Surely full credit should be given to those publications that have fought so vigorously and effectively to unmask the medical frauds of the land. No self-respecting newspaper, that pretends to exert a healthy moral influence in the community, should practice hypocrisy by publishing medical advertising that it knows is false, and is intended to secure from poor and ignorant people their hard earned savings. The constant agitation of this question is certain, eventually, to result in barring from the public press obnoxious and dishonest medical advertisements. A few years ago a Federal Pure Food Law of the character that now exists was thought impossible. Today, we have one remarkably thorough and sweeping in its provisions; but its jurisdiction is limited to Interstate commerce, and the intention now is to pass a State law of similar character that will control all food and drug products of State commerce.

It seems entirely probable that a law can be passed by Congress, constitutional in its provisions, and designed to bar from the mails all publications containing fraudulent and harmful medical advertisements. The Federal Government has power to enact such legislation and the need of it is strikingly apparent. This class of advertising is clearly intended to secure money by misrepresentation, and it does so largely by preying upon the credulity and ignorance of the public. No man or woman seeking medical relief, of the type most likely to be influenced by the high-sounding medical advertisement, is mentally fit for normal judgment. Their sense is warped by disease and suffering. They reach out like a drowning man grabbing at a straw, and buy "any old dope," or consult "any old doper" as long as their money lasts.

It is one of the functions of government to care for and protect the weak minded and the infirm. Governmental function has no limit as long as public policy is involved. The question is: does the individual or society need the care and protection of the State? In a way, the State is a foster-mother and her protecting arm should be ever ready to render assistance to her citizens. We have laws providing for guardians for minor children; guardians for drunkards and for the insane. A father can not settle the claim of his minor child without the consent of the Court. That is a protection that the State throws about the helpless and the immature. Otherwise, a drunken parent could release the claim of his offspring for a small fraction of its value.

Mr. Justice Field, speaking for the Supreme Court of the United States in the case of Dent vs. West Virginia, 129 U. S., said:

> "The power of the State to provide for the general welfare of its people authorizes it to prescribe all such regulations, as in its judgment will secure or tend to secure them against the consequences of ignorance and incapacity, as well as deception and fraud."

This rule is founded in sound public policy. Under it criminals are deprived of their liberty. Vice and pauperism are controlled. Noxious trades are regulated. Nuisances are suppressed. Children are required to attend school and the property of infants and persons *non compos* placed in the control of others. Likewise, the employment of children in factories under certain conditions is prohibited. And so the list might be almost indefinitely extended by specific instances of authorized legislative regulations, enforcing the social compact for the protection of life, health, morals, property and the general weal of the community.

If, therefore, the State possesses such broad powers as are here enumerated, why may she not undertake to protect her citizens against the smooth intrigue of the medical faker, who though he may have a license to practice is merely using that license as a cloak to extract money from the ignorant and the feeble minded; and, likewise, the patent medicine vendor, when it is clear that his representations are dishonest and even fraudulent. They prey upon the credulous and the weak minded who in most instances are suffering from some ailment, and the fear of death or serious illness—ofttimes born of ignorance—is readily kindled into terror by the charlatan. He is in no fit mental state to reason out his interests. He, therefore, falls an easy prey. If public policy means anything at all, it ought to extend in such cases the full function of governmental protection, and thus relieve the ignorant and the diseased from becoming further reduced to pauperism by the designing efforts of the dishonest advertising class.

This legislative programme that has been outlined by the Ohio State Association is probably the most complete and far reaching of any that has been undertaken in this State. For this reason the most active committee the Academy needs is the Legislative Committee. Its organization should extend to every medical society in every county in the State. That committee should be composed of the best men in the profession, some of whom can afford and are willing to give their time and effort. This committee should place itself in touch with a few of the most representative legislators in each district in order to obtain a strong and influential force in both the House and the Senate. It is certain that there will be much opposition, and especially from the advertising interests. Possibly the strongest antagonism will come from the press itself, and that is a powerful lobby to overcome.

The supporters of these measures can afford to conduct their fight in the open. They can meet and answer any charge of self interest that may be raised. They can force, if they will, every hostile interest to show its hand. The great and important fact to be everlastingly kept to the front, is the indisputable fact that these measures are intended for and absolutely certain to operate to the public good. Any unreasonable opposition to them is bound to be tainted with the odor of money. If the organized effort of the profession is what it should be, every Bill introduced ought to pass. As someone has said: "It is not a case of injecting politics into medicine; but injecting medicine into politics." With these facts in mind is there a physician in the State who can consistently refuse to do his part, if called upon by the Legislative Committee? Some will be wanted in Columbus to appear before the various committees, to interview legislators and to assist in compelling scheming and dishonest men to uncover. Several years ago the Anti-Saloon League started to fight. Today, the brewers have organized a Purity League of their own to moralize the saloon business. That is a plain, open declaration by the liquor interests of defeat. When a measure is right and is backed by a healthy fighting spirit no amount of opposition can stop it. Medical men have kept out of the fight long enough. They owe a duty to the public if they shall continue to merit public confidence. The intellectual force and power of 8,000 medical men in Ohio, carrying with it the unlimited support and influential aid that able men must certainly command, borne on by the conviction of right and duty, is sufficient to sweep a dishonest lobby out of existence, and to compel the respectful consideration of any law making body. There is no reason why a delegation from a hod-carrier's union should be shown more deference than a delegation of doctors. That is the fault of the doctors themselves. Not because they have no political standing; but because they prefer professional standing, and in consequence lack system and organization to produce results; not by political influence but by the far greater and irresistable force of energetic moral conviction. Indifference, lack of conviction and effort, mean professional stagnation. With proper co-operation and enthusiasm, even though it be a dignified enthusiasm, the medical profession will secure whatever legislation it demands, because that which it demands is right and above suspicion. It will mean, more and more, a profession to be proud of, and one that will win to itself that which is its due, a genuine universal public esteem.

Cleveland's Present Ambulance Service

By MYRON METZENBAUM, B. S., M. D.

At the present time the ambulance service of Cleveland is a private enterprise, conducted solely by the undertaking establishments. It is unlicensed and uncontrolled.

Cleveland's first ambulance was put into operation by a firm of undertakers 28 years ago. There are now 16 such establishments operating 21 ambulances. The only hospitals operating ambulances are the City Hospital and Lakeside Hospital which do not respond to emergency calls. For several years St. Alexis Hospital had an ambulance, but this was given up 10 years ago because it entailed an expense which is now borne by the various ambulance firms.

Most of the ambulances are very good vehicles, they run smoothly and are well protected. They are provided with clean blankets, clean sheets, tourniquets, splints, stimulants, etc. However, some of the wagons lack many of these necessities.

The drivers are the regular employees of the undertakers and some of them have been hospital orderlies, while others have gained such qualifications as they possess by long service on an

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Read before the Academy of Medicine of Cleveland, November 21, 1907 ambulance. However, many of the drivers are uneducated in the least degree in the knowledge of first aid to the injured, and often a driver's only merit is his ability to drive his horse at such a speed as to bring his ambulance first on the scene of accident that he may be able to lay claim to the injured before any other driver.

The attendant on the rear of the wagon is not usually an employee but one who is simply loafing around the barn and finds delight in making the runs.

Whenever an accident occurs one or several persons run to the nearest telephones. At the side of most telephones hangs a card of some ambulance and untertaking firm. The chance Samaritan does not stop to consider how near or how far away the ambulance may be. On this haphazard method much valuable time is often lost waiting for the distant wagon to arrive. On personal inquiry, every firm operating ambulances in the city, with the exception of two, informed me that they will make a trip anywhere, no matter how far distant, and take their chance of arriving first.

Frequently more than one ambulance, sometimes three or four, are called by various persons to the same accident. This not only entails an expense on the ambulance firms but it is a calamity, inasmuch as it takes out of service for a time several wagons which might be needed on other calls.

The cases have not been infrequent when several ambulances simultaneously having reached the scene of an accident, instead of helping one another, the drivers have rushed at the victim and fought over him for his possession.

The hospitals welcome the accidentally injured not for what it pays but for the experience it gives to the visiting surgeons, house physicians and nurses, and for the popularity it brings to the institution and because of the healthy rivalry among the hospitals to do all the good and charitable work they can. It is possible that a feeling of reciprocity may exist between the hospital staff and the ambulance firms by reasons of which courtesies are exchanged. The ambulance brings its injured to a particular hospital, and the hospital in turn favors that particular ambulance firm. In this there may be essentially nothing wrong, but the practice has led to instances of cruel treatment in which injured persons have been carried directly past a nearby hospital to some favored hospital farther away. For example, a west-side ambulance carried a man from Muirson Street, which is one block from

Lakeside Hospital, to St. John's Hospital, a distance of six miles, and, again, at the fire of the Holmden Avenue car barns, which are but three blocks away from the City Hospital, three firemen, one fatally injured, were carried four miles to Charity Hospital.

No ambulance is run with profit. The cost of maintenance is far greater than the sum of fees received for the service. Undertaking establishments run ambulances because of the possible funeral work that comes from it.

In order to secure this possible funeral work some undertakers render ambulance service to the large corporations either for nothing or for a very small fee, and consequently, often to his detriment, an injured employee must await the arrival from a distance of the firm's contract ambulance when a nearer one might have proved of lifesaving advantage.

It is needless to go into further details of the gross mishandling of the accidentally injured. Anyone who has had hospital experience knows how often the injured could have been better cared for had the ambulance attendants had some little knowledge of how to render "first aid."

There were 4200 accidentally injured persons conveyed by the ambulances in the year 1906. There were many more removed from scenes of accident in carriages, buggies and other vehicles. For their ambulance service the undertakers deserve great credit, but the time has come when the present system should be improved.

In order to obtain some definite information as to how other large cities operate their ambulance systems a letter was addressed to the Health Department, and another to the Police Department of every large city in the United States, asking for answers to the following questions:

1. How does your city conduct its ambulance service?
2. Have you a police ambulance service?
3. Do the various hospitals run ambulances?
4. Do the undertakers run ambulances?
5. Can you furnish a copy of the ordinances governing your ambulance service?

It was found that in the cities, New York, Brooklyn, Boston, Baltimore, Albany, Cincinnati, Detroit, St. Louis and Chicago, the ambulance service is under the control of the Police Department. They receive all calls and send the nearest ambulance or patrol ambulance.

In the same cities there exists a patrol ambulance system in which the patrol wagons are equipped for ambulance use and are either the only ambulances or are run in conjunction with the ambulances owned by the various hospitals. In Boston the Police Department operates 10 regular ambulances in addition to patrol ambulances.

In most cities where the hospitals maintain ambulances they are not the only ones. Usually the police ambulances are in requisition.

In no other city do the undertakers alone conduct the ambulance system. In this Cleveland has a unique system.

In very few cities is there an ordinance governing the ambulance system except to give the vehicles right of way and the privilege of unlimited speed. The service is usually operated by the police department, and this possibly because this department has a complete system of signals, a central bureau to which all calls can be sent, and an organized force of trained men.

In some cities, notably Cincinnati and Boston where they have a patrol ambulance system, a wagon responds to every fire call. In New York the ambulances receive all fire calls and a wagon responds at the third call.

With these facts and with the information and suggestions solicited from various sources, especially from the ambulance men themselves, the following possible plan suggests itself by which the services could be substantially and quite easily improved; it is one by which the present operators of ambulances would have proper recognition for their past good work and by which a little change would effect great improvement. The first plan suggested for the improvement of the present ambulance system was approved by the Legislative Committee and the Council of the Academy of Medicine, and the Legislative Committee was instructed to present the same to the City Council for possible adoption and enforcement.

1. Each ambulance operator should be licensed and before securing the license the establishment must be proved fully equipped with all the necessities for the proper conduct of its work.

2. The ambulance driver or attendant should be required to prove to the Board of Health that he has a sufficient knowledge of the principles of first aid to the injured.

3. All ambulance calls should be sent to the Police Central Exchange. The attendant here should despatch that ambulance

nearest the scene of accident, and in case that one is not available, the next nearest one should be sent.

4. Each ambulance should be assigned a certain territory.

5. The patient should positively be conveyed to the nearest hospital, except when he expresses a desire to be taken elsewhere.

6. The City Hospital should be opened to all classes of injured and this fact should be made known, and its ambulance should be required to respond to emergency calls.

By this simple plan the ambulance service will be under systematic control. The drivers or attendants will have to show competency. The wagons will be properly equipped. The public will know where to call. It will place the nearest ambulance on the scene in the shortest possible time. It will avoid more than one wagon making the same run. It will prevent the possible collision of drivers. It will assure the injured that they will be conveyed to the nearest hospital, and if the operator knows something of the nature of the accident, he can inform the hospital and they can be in readiness for the injured. To this plan very few, if any, valid objections can be raised, except that the department may be accused of showing favoritism, when two or more ambulances are in the same district.

To the foregoing could be added the police patrol wagon service. In many of the large cities the patrol wagons are equipped for ambulance service. Our present patrol wagons could easily be transformed into combination wagons. There are policemen who readily could acquire considerable degree of proficiency. There are in Cleveland 12 patrol stations some of which are situated in a district where there is at present need of an ambulance service. At the present time the untrained patrol wagon officers take the disabled to the patrol station and if in their wisdom it is deemed necessary, they then call an ambulance to carry the subject of their mercy to a hospital. The patrol ambulance wagon could be required to respond to every fire call, thus first rendering police service and secondly giving to the fireman a confidence similar to that which a soldier feels on a field of battle—that in case of injury he will be promptly cared for by the hospital corps.

To this latter plan some objections can be raised. It requires money to equip the wagons. The patrolmen might find this work not to their liking. At the present time many patrolmen have been given this assignment because they are not physically able to perform the regular beat service, or for other considerations.

Then, too, it may be objected that by this arrangement the wagon might be called out at times when needed for police service.

The ideal ambulance service is that which is owned, equipped and maintained by the hospitals and manned by hospital men trained in the handling of the sick and injured, who are privileged to exercise their judgment in all that pertains to the service. However, no such scheme for such an ideal service is now proposed, for we must not waste our time in the contemplation of the now unattainable. But in this age of rapid transit, swiftly-moving street cars, numerous railroad crossings at grade, speeding automobiles, electrically-charged overhead wires, thousands of factories vibrating under the power of dangerous engines, these and countless other factors having great possibilities for injury to men, demand some effort to reform this city's atrocious and haphazard way of mishandling the accidentally injured.

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Achondroplasia

By S. L. BERNSTEIN, M. D., Cleveland, O.

The rarity of achondroplasia justifies the reporting of every case that comes under observation. Though of an ancient origin, for the gods of Ptah and Bes were undoubtedly examples of it, it has not been commonly recognized as a special form of antenatal bone disease. That it has been mistaken for simple rickets or cretinism may explain the unusually few cases recorded. Already in 1856 Virchow had his attention occupied by certain fetuses with unusually large heads and short limbs. In 1860 Müller[1] recognized it as a definite pathologic entity, also that the disease is one of primordial bone cartilage and that the inhibition of the growth of the long bones is due to a disturbance of the normal arrangement in rows of the proliferating cartilage cells. Winkler in 1871 distinguished the condition from ordinary rickets and suggested the name "rachitis micromelia." Urtel[2] in 1873 gave an account of the macroscopic and microscopic appearances presented by a still-born child which corresponded in all details to Müller's case presented some years before. Earlier observers noted cases as congenital rickets but which, in the light of more recent investigations, were examples of achondroplasia.

The name "achondroplasia" was suggested by Parrot in

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1878 and is commonly used though the more accurately descriptive title "chondrodystrophia fetalis hyperplastica," given it by Kaufmann[3] at a later date is more correct. The term "achondroplasia" implies no growth of cartilage cells at all, this is obviously a mistake, as there is plenty of cartilaginous activity but not in the direction of increasing the length of the limb bones. Many other names have been given to this disease by various writers, based upon the experience gained by examining one case or one specimen but they have not succeeded in clearing up, to any appreciable extent, the obscurity that surrounds the whole subject. Consequently we have such other names as "fetal rickets," "intrauterine rickets," "micromelic rickets," "cretinoid dysplasia," "defective endochondral ossification" and "rachitis congenita." The external characteristics of this disease resemble rickets in so many ways that the two conditions may readily be mistaken.

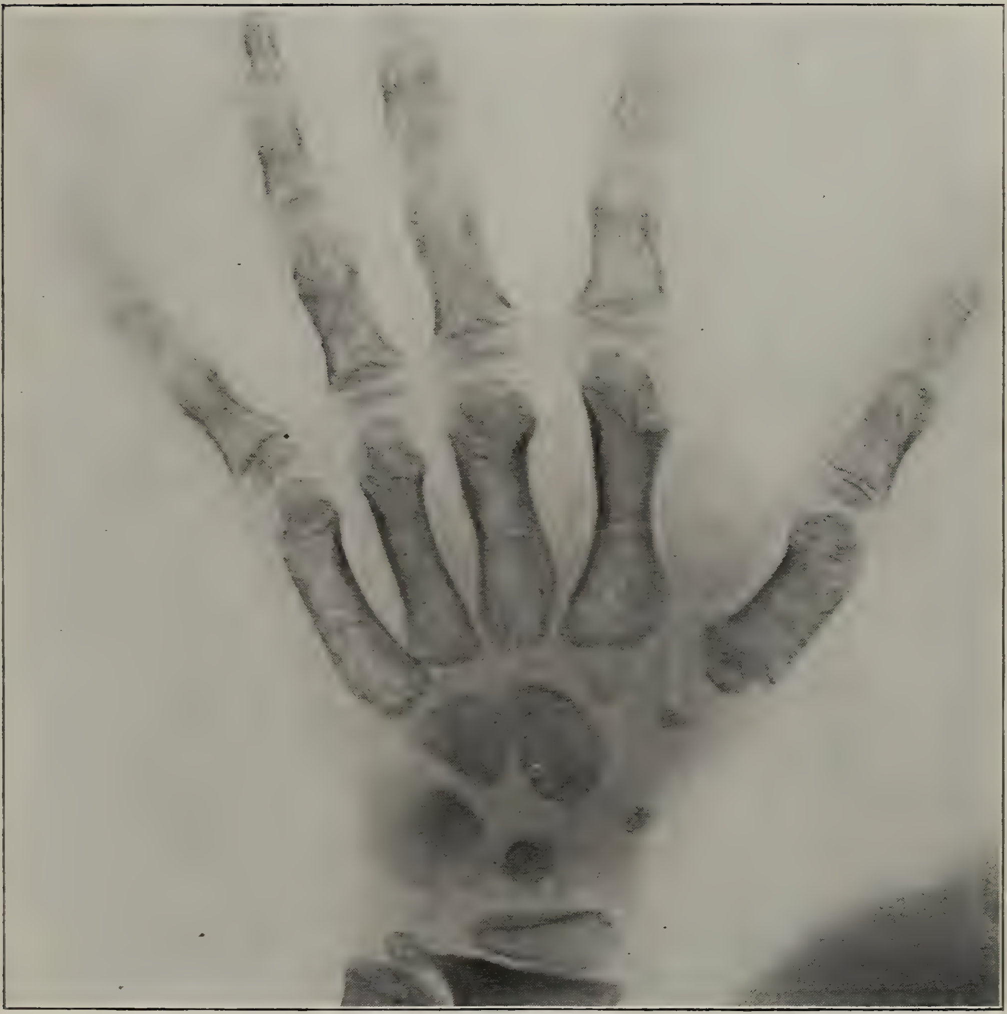
The confusion with cretinism is also not surprising because the physical features which accompany it are somewhat similar to those met with in achondroplasia. An achondroplasic child has distinct characteristics of its own. It has a large cranial vault, usually a pug-shaped nose; protruding chin; large abdomen; marked lordosis; short limbs, particularly referred to the humeri and femora; bowing of the bones; normal size of trunk and wheel-spoke appearance of the hands; and, in contrast to cretins, an unimpaired mentality. The legs are always short so as to be out of proportion to the size of the trunk and this stunts the figure in an asymmetric way which is quite different from other varieties of dwarfism in which the limbs and trunk are shortened in relative degree. The arms also are too short—the finger-tips never reach to the level of the hips as in a normal person. Aside from being shortened these long bones are usually deformed and bent. The umbilicus marks the central point of a normal infant, while in the achondroplasic child the center is above that landmark, frequently as high as the ensiform cartilage, and this relationship continues throughout life. Nathan has observed that the dwarfism is only noticed on standing; when the child is in the sitting posture its height is not far short of that of an ordinary person of the same age. The abnormality of the head is confined to the vault of the cranium which is unduly developed and out of proportion to the face. The recession of the base of the nose is not due, as in congenital syphilis, to bone disease, but is produced together with the prognathus and disproportionate vault by premature ossification of the basis cranii. The hair on the head and body is abundant and healthy, while the skin is well nourished and neither hard nor scaly. The fingers and toes are short and spatulate. The condition is always congenital.

The etiology of achondroplasia is entirely unknown. Rickets, syphilis and alcohol all of which have been given as causes at various times have not apparently anything to do with the disorder. Cretinism is also entirely distinct from it. Most cases are either still-born or do not survive very long; however, a number of cases in adults are reported. Keyser[4] collected the history of 34 cases, 18 subjects were over 17 years, seven were over 30 and two were over 40 years. The disease is frequently hereditary.

Porak[5] mentions the case of a woman who had the disease and gave birth to an infant similarly deformed. Porter[6] records three cases, a father and two sons, the father at the age of 80 and the sons mature adults.

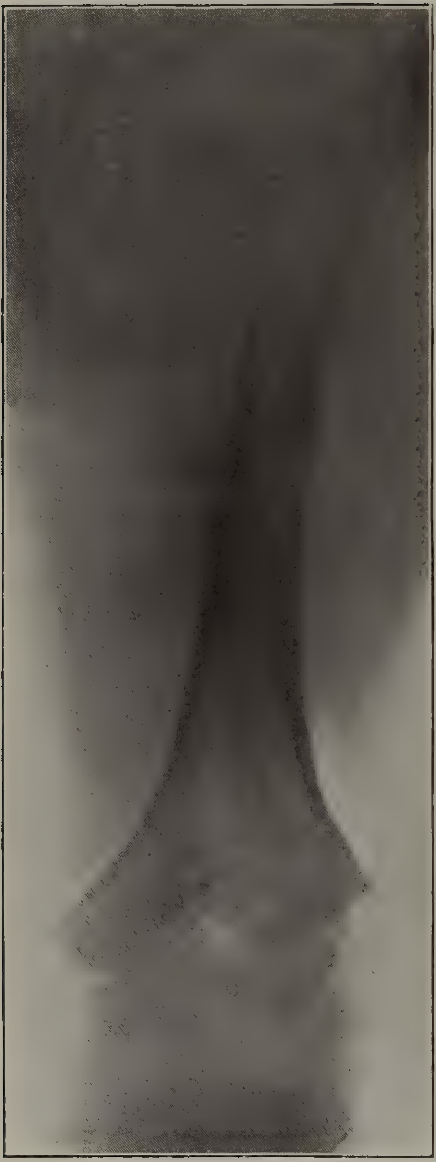
Boeckh[7] also published a case of a female dwarf suffering from achondroplasia whose father and several other relatives had been dwarfs with similar proportions. In some cases it has been found that one or both parents, although not actual examples of the disorder, are neverthless of extremely short stature. The male sex is more commonly affected.

The pathology of this disease is now much better known than before. The internal organs show little or no change. The chief pathologic changes are in the skeleton and in that part of it ossified in cartilage. The bones, therefore, which are formed in membrane are usually quite normal, such are the flat bones of the cranial vault. The skeletal changes are mainly due to defective endochondral ossification and the bones affected are consequently the long bones of the limbs, the ribs, the innominate bones and the posterior part of the base of the skull. Ballantyne[8], quoting Symington and Thomson, states that those bones which, although formed in cartilage, remain entirely or mainly cartilaginous till an advanced period of fetal life and the growth of which therefore is independent of endochondral ossification, show no abnormalities; such are the sternum, patella, costal cartilages, tarsal and carpal bones. The cause, whatever it may be, affects the infant very early, as the changes in the skeleton occur during the first few months of intra-uterine life. By the time the child is born the disease has run its course and is no longer active, so that the abnormalities seen are only the results of a malady which is passed. Ballantyne[8] states that this and other forms of fetal bone



RIGHT HAND

(slightly reduced)



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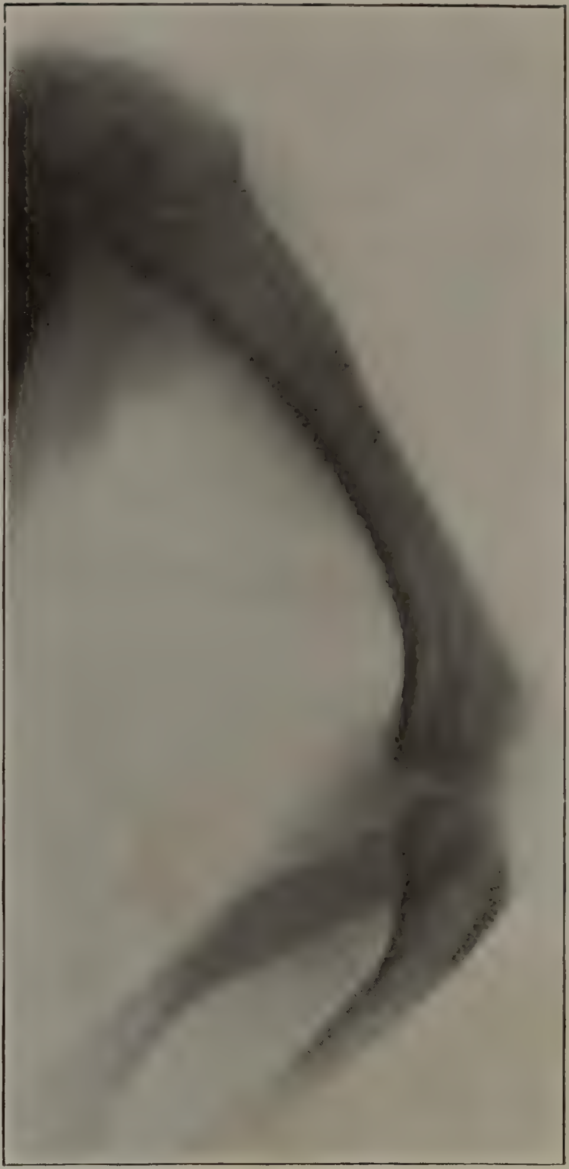

RIGHT HUMERUS
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disease are disconcerting to the pathologist and discouraging to the nosologist, tempting one to compare them with what has been said about the hydatidiform mole, that it is due to "einen unbekannten Etwas der Mutter" (An unknown something of the mother).

The following case has been under my observation for a number of years, though the diagnosis was not made until the early part of last year (1906).

A male child, age eight years, born of healthy parents, is the second child in the family. His sister is a well grown and developed girl, 14 years old. The mother is tall and apparently healthy. The father and the male members in his family in particular are rather short in stature, though above five feet. The father has short, stubby fingers. The grandfather of the child, on the paternal side, is described as a man of short stature with large trunk and short limbs but with no other characteristics of this disease. During the pregnancy, the mother felt exceptionally well and labor was normal. No history of miscarriages, lues or alcoholism. Shortly after birth it was noticed that the child's legs rotated outward. Before one year had passed a stunting of growth and inability to sit up was noticed. At the age of 10 months he was supposed to have had cerebrospinal meningitis, such symptoms as opisthotonus, high fever and vomiting being noted, upon recovery the supposed "weakness" continued until the child was four years of age. At that time he was a "peculiar mass of bone and flesh," flexibility of the spinal column and extreme movements of the hip-joints were noticed. He could sit and creep but neither stand nor walk. His mental condition was bright. A brace to support the body was a failure. Massage and electricity in a very mild way improved matters very materially, the child began to walk, his intelligence made rapid strides and all looked hopeful. But his mother noticed that in spite of his good health—barring slight digestive disturbances—his limbs were not growing in proper relation to the trunk—he would outgrow his coats and waists long before his trousers, and his stockings were much too long for his legs though they fitted the feet. Examination of the child shows a large vault of the cranium, square turned-up nose, large forehead, prognathus, short neck, large trunk in proportion to the size of the body, protruding abdomen, marked lordosis, short arms and legs with bowing of the humeri and tibial bones. The fingers are short, thick and spatulate. Knee-caps are present now, in his early life they could not be felt. Skin is of good color and soft, and hair abundantly grown.

Roentgenograms and the following description of the bones were made by Dr H. O. Feiss. "Radiographs show that the shaft of the humerus is considerably thickened as though the bone was growing in thickness rather than length. There is considerable bowing of the radius and ulna The lower epiphysis of the femur is quite rough both at its junction with the diaphysis and at the joint. Radiograph of the pelvis shows thickening of the necks of the bones and close union between the epiphyses and the neck. Another radiograph of the upper extremity shows a flattening externally of the epiphyses of the upper end of the humerus." The diagnosis of achondroplasia was confirmed by consultation with Dr H. O. Feiss of this city and Dr E. H. Bradford, of Boston, Mass.

The following measurements were taken on July 19, 1906:

Anterior superior spine to internal malleolus, right 15 inches.
Anterior superior spine to internal condyle, right 8⅜ inches.
Internal condyle to internal malleolus, right 7 inches.
Left about the same.
Right arm: end of clavicle to external condyle, 5½ inches.
external condyle to styloid of ulna, 5¾ inches.

From the supraclavicular notch to anterior superior spine, 12½ inches.
Height 40 7/16 inches, weight 39½ pounds (clothed).

On October 3, 1907, one year and three months later, these measurements were noted:

Anterior superior spine to internal malleolus, right 16¾ in., increase 1¾ in.
Anterior superior spine to internal condyle, right 9¼ in., increase ⅞ in.
Right arm, end of clavicle to external condyle, 6¾ inches, increase 1¼ in.
External condyle to styloid of ulna 6 inches, increase ¼ inch.
From the supraclavicular notch to anterior superior spine, 13 inches, increase ½ inch.
Weight, 45 pounds (clothed), increase, 5½ pounds.
Height, 41¾ inches, increase 1¼ inches.

The average weight and height for a child of eight years according to Boas[9] is 54¼ pounds and 48.2 inches respectively; thus this case is 9½ pounds under weight and 6.45 inches undersized.

Prognosis and treatment: As stated before, most cases are still-born or die soon after birth, but those who survive early childhood possess ordinary health. Dr Bradford stated that such cases are not more liable to fractures. They attain an average height of 4 feet 5 inches. No medication will alter the condition. In my case the treatment first was for infantile paralysis and rickets. Phosphorus, cod-liver oil and malt extracts in various cominbations were given for a long time but with no results from this therapy.

Thyroid extract, beginning with one-half grain doses three times daily, and gradually increasing to 12 grains per day, was used for about two months with no change in the condition. Massage and a mild Faradic current, when the child could neither stand or walk, were the only forms of treatment from which results were obtained. Recently physical exercises were tried but caused too much fatigue for their continuance.

Summary: Achondroplasia is a distinct disease, differing from rickets. It has characteristics of its own—as already described. The medical and physical treatment is of no avail.

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466 Lennox Building.

Veronal Dermatitis—Report of a Case

By H. B. ORMSBY, M. D.

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A perusal of the literature of drug eruptions has satisfied me that veronal dermatitis is of such rare occurrence as to warrant the report of a case before this Section. Drug eruptions are frequently seen by every physician, especially those due to quinin, bromids, copaiba, iodids, antipyrin, iodoform and arsenic. But I have never seen any eruption so acute, so extensive and which caused so much suffering as in this case of veronal dermatitis which occurred recently in my practice.

Veronal, a fine, white crystalline substance, having a slightly bitter taste, soluble in 12 parts of boiling water and in 145 parts of cold water, was first introduced in 1903 by Fisher and von Merring. It is commonly prescribed in five to 10 grain doses, every three to five hours until sleep is produced. A single dose of 10 grains near bedtime is frequently sufficient to produce a quiet, restful sleep for from six to eight hours, followed very rarely by any depressing after-effect such as nausea, vomiting or lowering of arterial tension. It is generally considered one of the best hypnotics of the day, especially in acute or subacute melancholia, in acute alcoholism in 20 grain doses, in low nervous states following acute inflammatory diseases, etc. Yet, there have been a few cases, including my own, of unfavorable results following its use, probably due to idiosyncrasy and not to its being a dangerous drug, as it is a valuable addition to our armamentarium.

A. C. Jordon (*British Medical Journal,* March 5, 1907) reports two cases of slight antipyrin-like rash, lasting two days, following the use of veronal. H. David, of Berlin (*Berliner Klin. Wochensch.,* Nov. 30, 1904), reports a slight erythema lasting three days. P. T. Held (*Therapeut. Monatshefte,* Nov., 1904) observed a pemphigus-like rash from the ingestion of 9.0 grams at one dose, taken with suicidal intent but followed by recovery. Kuhn (*Deut. Med. Wochensch.,* March 16, 1906) reports an itching rash upon the face and upper part of the body, with the formation of vesicles on the buccal and pharyngeal mucous membranes. Clark (*Lancet,* 1905) reports a dermatitis after a total amount of 7.5 grams of veronal taken within a few days. House

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Read before the Clinical and Pathological Section of the Cleveland Academy of Medicine, December 6, 1907

(*Journal A. M. A.*, April 20, 1907) reports a similar case of extensive dermatitis involving the entire body. Buckley (*Journal A. M. A.*, June, 1907) also reports a case of veronal dermatitis from the ingestion of 22 grains.

The patient, Mrs. H. G., housewife, aged 54 years, had suffered about three years from varicose veins of the feet and lower legs, resulting in some angina, and stiffness of the feet and ankles, with a consequent general neurasthenic condition. She had tried rubber stockings, liniments, baths, mineral springs, and electricity, with about the same result, viz., temporary relief. Physicians had been able to give her little relief from the pain and burning, due, probably, to the pressure of the engorged veins upon the nerve trunks. She had not been able to walk for nearly four weeks on account of the severe pain in the ankles and feet. I applied a woven, elastic bandage after elevation of the leg, beginning as near the toes as possible and extending it to the knee, applying even pressure throughout, and prescribed five grain doses of veronal to be taken at 4 and 8 P. M. With the much needed rest derived from the veronal and bandages, she was able to walk about her home and do light housework. About the fifth day after beginning the veronal, she developed a high fever, coated tongue, headache and general malaise, with some itching of the skin, especially between the fingers and toes and on the dorsal surfaces of the hands and feet. These symptoms gradually grew worse for three days with continued high fever. Delirium and general restlessness now set in, the patient throwing herself from side to side so that she had to be forcibly kept in the bed. The hands, forearms, legs and face became red and swollen, accompanied by some itching. I now had a perfect picture of drug toxaderma, and at once concluded that my patient was suffering from veronal poisoning.

The three previous days, I had treated her symptomatically, as I was unable to make a positive diagnosis and had stopped the veronal for fear of concealing symptoms. I now prescribed sugar of lead lotion and an alkaline mixture internally, with an opiate for relief from the terrible itching and nervousness. In spite of all treatment, the dermatitis extended until the entire body was involved. The face became enormously swollen, the eyes closed, the extremities edematous, stiff and painful, in fact the picture was not unlike an erysipelas involving the entire body. The fever which had remained around 104 and 106 degrees Fahrenheit while the eruption was at its height, then fell to nearly normal with no further rise. The swelling and itching gradually subsided so that in about six days it had entirely disappeared followed by a desquamation of the epidermis of the entire body resembling the desquamation following scarlet fever. Later the nails of the fingers and toes became black and brittle, and falling off were replaced by new ones, the matrix not having been destroyed.

Now this extensive dermatitis could have no etiologic factor except the ingestion of the veronal because she had received no other drug while I cared for her. Yet I do not wish to condemn the drug as the patient no doubt possesses an idiosyncrasy for veronal. The remedy meets a certain class of conditions more satisfactorily than many other drugs of its kind.

532 Rose Building.

Report of a Case of Paralysis of the Accommodation

By CHARLES C. STUART, M. D.

According to Dr Suker, in a very able and thorough monograph on the subject, published in 1903, the first description of paralysis of the accommodation was given by Wells in 1811. Nothing was known at this time as to the center or centers concerned in the performance of the act. This was all established later, and by 1880, the present status of our knowledge as to the complexity of the third nerve and its various centers for its component parts, was well fixed. Again, quoting from Suker, "These centers lie partly in the posterior part of the third ventricle and partly beneath the corpora quadrigemina in the floor of the aqueduct of Sylvius. They lie directly behind one another. That portion of the nucleus of the third nerve in the posterior extremity of the floor of the third ventricle, just in front of the opening of the aqueduct, causes ciliary muscle contraction: a little farther back in the aqueduct is the iris contraction center: the center for the external ocular muscles is next."

The following case which in its clinical aspect is not rare and probably seen before by all present is yet to me a source of unfailing interest.

The individual, W. C., married and 30 years of age, presented himself at my clinic recently complaining of inability to see to read. The trouble dates back about one year when he had headaches and pains in the temples which were not relieved by the ordinary medication. After two months

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Read before the Ophthalmological and Oto-Laryngological Section of the Academy of Medicine of Cleveland, November 22, 1907 of this trouble he developed dilated pupils and disturbances in the use of the eyes at the near point and from that time on headaches ceased.

Examination of the eyes and the adnexa reveals no disturbance of the external muscles (exophoria 1°). Vision is nearly normal in each eye; the eye-grounds present an inflammation of the retino-choroidal type and there is a dilatation of each pupil (O.D. 6 mm. and O.S. 5 mm). Examination of urine negative.

It requires the addition of + 3.00 S. lens before each eye to bring No. 2 Jaeger test type up to the ordinary reading point of 33 cm.

The patient has an ophthalmoplegia interna having paralysis of both the ciliary muscle and sphincter pupillae of each eye. On careful questioning, there is revealed a history of syphilis of 10 years standing; this is undoubtedly the etiologic factor and the position of the lesion is in the nucleus of the third nerve involving these two centers.

In a report of Helbron from the eye-clinic of the University of Berlin, covering a period of two and one-half years, out of 300,000 eye patients, there were 103 cases of paralysis of the accommodation, a ratio of one to about 2,900 cases. This is the first case observed at Charity Hospital Clinic and is in about the same ratio as that of Helbron. Helbron in speaking of his cases divides them into three groups: (1) those of the nervous system, (2) those due to infectious diseases, (3) those due to the various intoxications. Diphtheria and acquired syphilis are the two most prominent causative factors in this trouble. A few cases are reported in which hereditary syphilis was probably the etiologic factor but they have been very rare. Personally I cannot see why cases of paralysis may not develop from hereditary syphilis, as from reports now being received, the Spirochaeta pallida is being found in the tissues of such individuals. A few cases of this class are being reported following typhoid, mumps, measles, scarlatina, whooping-cough and at times no causative factor can be determined.

It would seem to be a good plan to examine the amplitude of accommodation of all patients as a routine measure; a paralysis or paresis of the accommodation may be the explanation of a number of cases which require much stronger lenses for close work than their age would indicate.

105 Lennox Bldg.

The Cleveland
Medical Journal

CONTINUING { THE CLEVELAND MEDICAL GAZETTE and
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

The Official Organ of the Academy of Medicine of Cleveland

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EDITORIAL

Immunity Against Poison Ivy

While there have been immune sera established against a great variety of substances, it has been the claim of Ehrlich and other prominent authors that it was not possible to establish an active immunity against any substances not proteid in origin. It was claimed that any appearance of immunity against non-proteid material was in the line of tolerance and was not a true immunity. The proof of such matters lies in the possibility or impossibility of forming sera in the supposedly immunized animals which may be used to protect another animal against the attack of the poison or the organism. Increased tolerance cannot be thus used but is peculiar to the one animal concerned, and dies with that animal. Among the non-proteid substances which are of medical importance are the glucosides, composed of one of the sugars and some acid, and readily broken up into these by the use of proper reagents. Many of these are well known, and come into daily contact with our lives, but perhaps the most familiar is the poison of poison ivy, or Rhus toxicodendron. Careful experiments by Abel and others have shown that the active principle may be entirely freed from proteid and proves to be a glucoside. It has long been thought, more or less empirically, that there was a greater or less degree of immunity established accidentally in persons frequently exposed to the plant but no laboratory proof has been offered till recently.

The November number of the *Journal of Infectious Diseases* contains an article by Ford, embodying recent work on this subject, in which, in a series of clean cut experiments, he shows that not only can a definite active immunity be established in animals against the poison, but that the blood of these animals is able to protect other animals against manyfold the fatal dose. The article is of great importance not only as establishing the possibility of a rational serum treatment of ivy poisoning, but also because it opens up an entire new series of toxemias for research and study. There is a not unnatural tendency to accept the word of recognized authorities as to the possibility of application of some given principle, but work of this type indicates that it is very difficult to state definitely that the last word has been said on any subject.

Growth of Bacteria in Pasteurized Milk

Inasmuch as the statement is now frequently made, especially by milk dealers, that the only solution of the milk problem is the universal Pasteurization of the product, it is of unusual interest to note the results of a series of experiments regarding the relative value of Pasteurized and raw milk as food, especially for infants.

Inasmuch as many of the body fluids, and notably the blood, contain substances which have a definite bactericidal action, it is not unreasonable to suppose that the same may hold good for milk, and in fact this has been claimed by a number of observers. These protective substances are destroyed in the blood by a temperature distinctly below that of the usual Pasteurization, indicating that in case of their existence in milk they may also be destroyed there. St. John and Pennington, in the last number of the *Journal of Infectious Diseases* have taken up this question from a scientific standpoint and have arrived at some very interesting conclusions. Starting with milk obtained under the most favorable circumstances possible, parallel samples were studied, the one series being from the untreated milk, the other from the same milk, after Pasteurizing, and subsequently reinfecting with the same bacteria as were in it before in as near as possible the same amount. These samples were incubated at various temperatures to determine whether there was a greater increase in the bacteria in the Pasteurized milk or in the raw milk.

The experiments were carried through with a large number of controls and the conclusions drawn by the authors and justified on the face of the experiments are as follows: In the first place the raw milk shows a restraining influence on the ordinary milk organisms during the first few hours which is not seen in the milk heated to 79°C. Provided the milk is delivered within a few hours after Pasteurization this would be of less moment, but the usual rule is that the milk is not received by the consumer till the greater part of 24 hours have passed, and the milk in the meanwhile is not ordinarily kept under the best of conditions as regards temperature.

In fact the length of time elapsing between milking and delivery is the main reason why Pasteurization has become so prevalent and why there is so large a number of Pasterizers on the market. The general application of the results, granting them to be trustworthy, is that the solution of the milk problem, notably as concerns the feeding of infants, does not lie in the use of sterilization to a greater or less degree, but in adequate precautions against the infection of the original supply at any stage in its career from the cow to the consumer, and in the preservation of the milk at so low a temperature as to hinder the development of the unavoidable organisms and to give the natural resistance of the milk a chance to act.

Increased Dues for the Academy

The proposed increase in dues of the Academy of Medicine of Cleveland is a measure that should receive the favorable consideration of all the members and it is hoped that the vote at the January meeting will indicate that the importance of the manifold activities of the Academy are realized by the members. The reports of the secretary and the chairman of the membership committee, which are to be found in the Academy proceedings in this issue, will indicate the advantages derived from such financial support. Let every member therefore show his appreciation of the importance of the Academy by voting to strengthen its hands financially.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Cardiac Dilatation: In the *American Journal of the Medical Sciences* for November, Thomas A. Clayton considers the treatment of dilatation of the heart and believes it necessary to bear in mind two cardinal objects: to lessen the amount of work which is required of the heart and to increase the power of the heart to do its work. The first may be accomplished by absolute bodily and mental rest, by a light diet, by active purgation, by relaxing the peripheral vessels and by bleeding. The second may be accomplished by the administration of cardiac stimulants, by baths, by judicious exercise, etc Prophylaxis is worth much in cases of beginning dilatation, but even after serious symptoms have actually developed, much may be done without cardiac stimulants. Some patients yield promptly to rest in bed, a dose of calomel or blue mass, followed by salines. If this fails to restore the circulatory equilibrium, digitalis is used by the majority, but in his opinion caffein is a very close second, and not infrequently is superior. He emphasizes the fact, however, that digitalis is indispensable in some cases, in spite of high blood-pressure or marked calcareous degeneration of the arteries, as far as they can be felt. When our best efforts fail, and the symptoms even grow worse, heroic handling is required, and these cases, if properly selected, are often benefited by bleeding, for which he prefers the very simple method of opening a vein in the forearm, and drawing off from eight to 16 ounces of blood. The results are in some instances most gratifying, and after cardiac tonics produce results which previously seemed unattainable. He believes that in dilatation of the heart, opium properly given is most useful. These patients are often possessed by that spirit of unrest, that condition of general wretchedness, which is hard to describe, but which is perfectly familiar to us all. For this symptom-complex there is nothing so useful as small doses of morphin. He has found as little as 1-32 grain every four hours most beneficial; not only does this quiet the nervous system, but it seems to stimulate the heart, and in most cases appears to do no harm. Caffein is especially useful when edema of the lungs is pronounced. In fact nitroglycerin, caffein and digitalis may be given at the same time if indicated. In strychnin he has rather lost faith.

Nephritis: In the *Therapeutic Gazette* for November, James Tyson, in considering the treatment of nephritis, knows of no drug which will create new renal cells to substitute those replaced by connective tissue, and our object must be to save the kidney from irritation. There is perhaps, even in the mild degrees, a tendency to anemia, which requires the administration of iron; but this remedy, in the shape of the well-known Basham's mixture, is too carelessly administered and often does more harm than good by causing constipation and locking up secretions, and he does not give it as often as he used to do. Iron should be given in small doses, and he often gives the tincture of the chlorid in combination with very small doses of bichlorid of mercury freely diluted. The bichlorid checks abnormal fermentations and the generation of toxic substances in the stomach, and intestines. A regular, sufficient action of the bowels tends to the same end, and purgatives acting on the liver are especially serviceable in ridding the blood of toxic substances and a weekly or bi-weekly dose of calomel is suitable. Some physicians advise the more or less constant administration of the iodids in every case of chronic nephritis, he uses them a great deal. He advises as diuretics aceto-theocin. It is one of the caffein group of which diuretin is another, and they are said to dilate the blood-vessels of the kidney as well as to increase the strength of cardiac contraction. The dose of theocin is three to five grains every six hours and while more reliable than diuretin he has known the latter to act very well. In uremia, venesection with hypodermoclysis, purging and sweating are the sheet-anchors. Another valuable measure is the injection high up in the colon of hot salt solution at 110° F. For the renal headache he has found pilocarpin nitrate or muriate of value, the first dose to be 1-12 grain rapidly increased to produce an effect on the skin. Before using morphin for these severe headaches, caffein, nervous sedatives and counter-irritation should be tried.

Hyoscin Anesthesia: Frank B. Kirby, in the *New York Medical Journal,* for November 2, writes concerning the hyoscin-morphin combination when hypodermically used as an anesthetic. In the first place he insists that we have, as nearly as possible, chemically pure drugs. A trace of atropin may vitiate results. The morphin must be free from thebain and apoatropin is debarred. The great advantage of hyoscin-morphin hypodermic anesthesia is the freedom from shock. The patient passes into a quiet sleep after the first dose and the second dose may produce a deep snoring, but absolutely no excitement. The patient may not be completely anesthetized after the second dose, and a *few* drops of chloroform will now produce loss of pain sense; an advantage is the freedom from nausea especially seen in abdominal work. The disadvantages are minor in character, and the best results are obtained in a perfectly quiet room, hence a clinic is badly adapted for hyoscin-morphin anesthesia. The patient is given a hypodermic injection of hyoscin and morphin. The room is preferably darkened, and the patient encouraged to go to sleep. One hour later, a second dose is administered, and a half hour later, the operation may be begun, but if the patient is not completely "under" a few drops of chloroform will suffice. In cases susceptible to hyoscin we may get a low delirium, and in others a marked redness of the skin and face from the dilated capillaries. These are by-effects and transient. His experience is mostly in obstetrical work in which the patient usually sleeps between the pains, which always awaken her to active help in aiding expulsion. In some few cases the child has been cyanotic for a while but always revived in a short time. This effect on the child is avoided by omitting morphin from the second dose, and in no case have untoward results been observed. This anesthesia is too profound for minor surgery, and should be used with care at the extremes of life. He believes that hyoscin-morphin anesthesia bids fair to outrival vapor anesthesia, and in railway and other accidents, in which many suffer pain, it will be of inestimable value.

Pulmonary Tuberculosis: In *Mercks Archives* for November, Carroll Chase states that the cure of pulmonary tuberculosis can only be accomplished by the two absolutely essential agencies of abundant and constant, pure, outdoor air, and scientifically regulated forced feeding up to, but not beyond, the patient's capacity. Still, drugs have a most important place in the treatment of this condition and its complications, and of these there is no one remedy to compare with strychnin as an all-around tonic. The only common symptom contraindicating its use is diarrhea. It will help the appetite, if any remedy will, because of its extreme bitterness. It is a splendid stomachic, increasing the flow of gastric juice and improving the nervous and muscular tone of the stomach and intestines. It frequently overcomes moderate constipation. As a nerve tonic and respiratory stimulant its value is marked. He gives an adult 1-30 grain three or four times a day before eating and this dose may often be increased to advantage. He believes that strychnin is frequently given in too small doses. In cases in which it cannot be used and a heart tonic is not needed, he uses a cinchona preparation or one of the simple bitters, such as quassia. As a substitute, to stimulate the heart, he has used spartein with the greatest satisfaction. This is another remedy ordinarily given in too small doses, half to one grain four times a day being none too much. When iron is indicated he prefers the tincture of the chlorid or some other pharmacopeial agent rather then one of the more or less popular organic iron compounds. Arsenic too is a most excellent tonic when there is any likelihood of malarial taint. As regards cough, some physicians overlook the fact that a certain amount of cough must be expected with any tuberculous lesion of the lungs sufficient to require treatment. When the amount of coughing is out of proportion to the amount of sputum raised, and the latter is not tenacious, codein is the remedy *par excellence*, one-eighth grain often acting as well as a larger dose. When this does not aid he prefers dionin in small doses.

Autointoxication: H. Richardson, in the *Medical Record* for September 21, writes concerning the hepatic functions, and the treatment of autointoxication. In acute cases thoroughly flushing out the alimentary tract, with calomel and magnesium sulphate, is usually sufficient, but in those cases of neurasthenia, nervous breakdown, nervous dyspepsia, etc., more is required in long, careful, dietetic and medicinal treatment. Attention to the biliary secretion is of the utmost importance. The active principles of the bile are glycocholate, and taurocholate of sodium, which hold the cholesterin, and bilirubin in solution, preventing the formation of gall-stones; without their presence the organism becomes intoxicated from the nonelimination and chemical conversion of the toxins. The so-called cholagogues of the Pharmacopeia have proven not to increase the formation of bile, and the only cholagogue is nature's,—the bile salts, sodium glycocholate and taurocholate. The administration by the mouth of sodium glycocholate mass which contains taurocholate of sodium, or which is absorbed from the intestine, increases the flow of bile, at the same time stimulating the liver cells. The sodium glycocholate c. p. is apt to produce nausea, burning and painful diarrhea. The diet in hepatic disease and especially in autointoxication is of great importance. In the first place, the quantity of food taken should be small; secondly, it should be easily digested and must therefore, as far as possible, correspond with the patient's tastes, or the psychic stomach juice will not secrete; thirdly, it must contain no substance which is itself toxic, or which will produce a toxic substance during metabolism; fourthly, it should be an unfavorable culture medium, or contain some substance inhibitive to the growth of bacteria. Rest is the best medicine for any deranged physiologic function and starvation is rest for the liver. The food should therefore be reduced to the minimum quantity required for physiologic needs. So far intestinal antiseptics have proved inefficient. Chemical antidotes have not been found for the organic toxins which are an ever-present menace to health, and our greatest hopes rest upon the action of oxidizing ferments, such as the oxydases.

Gelseminin: In the December number of *Clinical Medicine,* William F. Waugh writes concerning the alkaloids of gelsemium. These are two in number: gelsemin and gelseminin. The former, gelsemin, resembles strychnin in its action and beyond this little is known about it. It is one of those remedies of the strychnin group which need investigation. Gelsemium, however, usually depends upon the gelseminin which it contains for its effect, as this overbalances the gelsemin present. To insure accuracy, however, the alkaloid gelseminin which represents the special sedative action of the drug should be used. Gelseminin seems to be a pure sedative, and resembles cicutin, but exerts a greater sedation upon the central nervous system. Therapeutically, since gelseminin lessens the blood-supply to the cerebrospinal centers, it is indicated in all cases in which there is hyperemia of the brain or cord; in fact in all cerebrospinal inflammations and hyperemias, but not in passive congestions. It is most effective in the earlier stages of fevers, with sthenic manifestations. In small doses it is likewise of value in many forms of nervous irritability, even in such small matters as nervousness or "fidgets." It is especially valuable in ovarian neuralgias, in which it should be given in full doses. It gives relief in any painful or any spasmodic condition of the genito-urinary apparatus. In fact he looks upon it as almost specific in acute inflammatory or neuralgic pains in the genito-urinary apparatus of either sex. It is one of our best remedies in spasmodic dysmenorrhea, and uterine colic; also rigidity of the os uteri with dryness and it relaxes any spasmodic stricture. It is a useful remedy too in any alcoholic delirium, in ordinary mania, and in ocular inflammation, and it promptly relieves the pains, headache and irritability of all forms of influenza, without the depression following the use of coal-tar products. As a rule it is best given in small doses, frequently repeated until the desired effect is manifested. The ordinary adult dose is 1-250 of a grain repeated every 10, 15 or 30 minutes as required, until dropping of the eyelids and weakness of the lower jaw show beginning toxic action.

Vasomotor Regulation: In the *Monthly Cyclopaedia* for November, J. Madison Taylor believes that whatever basis we use in classifying diseases, all repair is conditional upon the amount and quality of blood distributed, and this again depends on the integrity, the functional competency, of the vasomotor mechanism. Whatever remedial agents we employ become efficacious in proportion to the degree and proportion of blood-distribution. While variations in vascular tonus are not alone indications of danger to health (depending as they do upon the amounts and qualities of toxins circulating), nevertheless, we must see to it that those entrusted to our keeping are at least maintained in a suitable vascular equilibrium. He alludes to his clinical experience of over 25 years in the use of auxiliary therapeutics, mainly physical agencies, whereby vasomotor regulation is the one most graphic effect secured. He is convinced that if half of the exact study were given to the physiologic effects of these agencies that has been so voluminously bestowed upon the action of drugs, our reparative triumph would be far more conspicuous. The principle on which these vasomotor effects are clinically wrought, consists in the fact that by crude attempts at compression and relaxation of muscles and other masses not only is hematic ebb and flow enhanced but a complex variety of vasomotor reflexes are induced. The most important of these are through the paravertebral tissues, which are innervated by the posterior primary divisions of the spinal cord. Hence continued pressure on the tissues of the back, for two or three inches on either side of the median line, induces reflexly vasodilation in remote areas; and conversely alternating pressure induces vasoconstriction. Cold by ice-bags irrigations, douches, etc., is powerful to induce surface vasoconstriction. With cold, by short applications, we can produce prompt vasoconstriction, which will be balanced by a compensatory vasodilation. Hence, the alternation of heat and cold enhances the ebb and flow of the blood, useful in a variety of acute and subacute states. By the continued application of cold, much can be done to allay irritability in severe sensory disorders, thus Weir Mitchell successfully treats sciatica by ice-bags continuously in contact for days and weeks and with the limb held at absolute rest.

Iron: The *Journal A. M. A.* for September 28, calls attention to the contradiction between clinical results and experimental observations in the use of inorganic iron given by the mouth. The evidence collected by Erich. Meyer seems sufficient to settle, beyond reasonable doubt, that inorganic iron can be and is absorbed from the intestine and utilized in the formation of hemoglobin, when given in the usual medicinal doses. The liver is the great storehouse for iron, and apparently the hemoglobin of the blood is largely formed from iron which has been stored in this organ as ferratin. It would seem that no matter in what form iron is given it is first taken to the liver and perhaps also to other storehouses, where it is held until needed for the formation of hemoglobin; therefore, after hemorrhages, the iron reserve in the liver is rapidly depleted. It is probable that no matter how the iron is combined when it enters the stomach, it is not used directly for the formation of hemoglobin, but is always first converted into the ferratin of the liver, which constitutes an intermediate step in the conversion of food-iron into hemoglobin, thus ensuring a constant material for the formation of hemoglobin irrespective of the sort of iron compound obtained by the animal in its food. That inorganic iron is converted into organic forms or compounds in the liver is shown by experimental investigation, and hence it would seem that there should be no fundamental difference whether the iron given therapeutically is organic or inorganic in form and this perhaps may be the real reason why there exists so much honest difference among clinicians as to their choice of iron preparations.

Follicular Tonsillitis: The *Medical World,* for December, believes that follicular tonsillitis is becoming more prevalent, and recommends a line of treatment which, employed for years, has yielded almost universal satisfaction. It brings the symptoms into speedy abeyance, and the recovery is rapid and has never been contrasted with other methods to its disadvantage. In doubtful cases, the author has frequently taken diphtheria antitoxin with him on the second visit only to find the membrane disappearing, and antitoxin not needed. The patient dissolves a tablet, containing one-eighth to one-fourth grain each of calomel and sodium bicarbonate (the quantity of calomel being regulated by the severity of the attack and the age of the patient), on the tongue every hour. Swab the tonsils every hour thoroughly with pure peroxid of hydrogen. These are alternated so that the throat is treated every 30 minutes. To an adult, and to children a dose in proportion, is given every half hour until the fever "drops" or until six doses are taken, acetanilid 2½ grains, camphor monobromated ½ grain, caffein citrate ½ grain, sodium salicylate 1 grain, extract hyoscyamus ⅛ grain, tincture gelsemium 2 minims. The fever quickly disappears; a cathartic action is secured; the malaise vanishes; the "plugs" of cheesy material (or membrane) are dissolved from the tonsils; and generally within 48 or 72 hours the patient is ready for duty. The author has been unable to parallel these results by any other form of treatment.

Academy of Medicine of Cleveland

The fifty-third regular meeting of the Academy, being the Annual Meeting, was held Friday, December 20, 1907, at the Cleveland Medical Library.

The following officers were elected for 1908: President, H. W. Rogers; Vice-President, L. W. Ladd; Secretary, C. E. Ford; Treasurer, W. S. Hobson; Trustees, J. J. Thomas and W. E. Lower.

The following reports were read:

REPORT OF THE SECRETARY

For the Academy of Medicine the year 1907 has been one of exceeding activity. Every Section and Committee has contributed its portion in the labors of the Academy and is entitled to great praise.

During the year the Academy has held 10 meetings, five of these have been addressed by men from foreign centres. They were Dr Dan Milliken, Hamilton, Ohio; Dr W. Gilman Thompson, New York; Dr John M. Anders, Philadelphia; Dr Charles H. Frazier, Philadelphia; and Dr Robert H. Babcock, Chicago.

Nineteen papers were presented at the regular meetings of the Academy; six on general medical subjects, 10 on surgical subjects, one on public policy, one medico-legal, and one literary effort.

I regret to report that the average attendance of the Academy shows a decided decrease, an average of 37.4 per meeting under that of the previous year. This decrease has been accounted for by the increased attendance at the Section meetings; the increase in the Experimental Section being phenomenal. It has also been thought that the fact that the meetings for the year have been held at a point further from the center of the city has had to do with the decrease. These explanations are not wholly satisfactory in view of the merit of the programs. The smallest number present at any meeting was 92, the largest 190, and the average 110.

The growth of the Academy has been a healthy one:

	1905	1906	1907
Active members	426	443	466
Non-resident members	86	87	89
Associate members	5	3	4
Honorary members	1	1	2
	518	534	561

Losses—	1905	1906	1907
Resignations	7	11	8
Deaths	8	3	4
Suspensions	31	4	9
	46	18	21
New members			48

Members who died during the year were: E. M. Koblitz, Ethel Weideman, A. H. Mead and A. G. Hart.

The Academy is to be congratulated in that it continues to be recognized as a model organization of its kind. The Secretary has again this year received many inquiries concerning its plan of organization, its rule of procedure, etc., from other prominent cities.

As a local member of the State Committee on Public Policy and Legislation, your Secretary has made three trips to Columbus and two trips to other points during the year to meet with the State Council and the State Legislative Committee for consideration of the following bills to be introduced at the coming session of the legislature, looking—

1. To the regulation of the manufacture and sale of proprietary medicines within the State; to secure for Ohio the full benefits of the provisions of the National Pure Food and Drug Law.

2. To the creation of the office of the County Medical Officer of Health.

3. To the amendment of the law on criminal abortion.

4. To the prevention of advertisements, in the public press, of cures of venereal and sexual diseases and other flagrant medical frauds.

5. To the registration of vital statistics.

6. To the re-establishment of local boards of health for cities, on the merit system, as provided by the code of 1902 before amended in 1904.

7. To the appointment of all public medical officers from nominations made by the State and County Medical Societies.

8. To the amendment of Section 1538, 730 R. S., so as to limit the legal publication of the rules and regulations of health authorities to their titles.

9. A bill for the registration and examination of Graduate Nurses.

The Council comprised J. B. McGee, President; J. J. Thomas, Vice-President; Clyde E. Ford, Secretary; W. S. Hobson, Treasurer; C. J. Aldrich and C. A. Hamann, Ex-Presidents; The Board of Trustees, F. C. Taylor, H. E. Handerson, J. G. Spenzer, Chas. Gentsch, J. N. Lenker and G. W. Moorehouse; Torald Sollmann, W. B. Laffer and W. E. Shackleton, Councillors from the Experimental, Clinical and Pathological and Eye and Ear Sections respectively; W. H. Merriam, Roger Perkins, W. H. Weir and E. S. Lauder, Chairmen of the Program, Public Health, Legislative and Membership Committees respectively.

During the year the Council held nine meetings with an average attendance of eleven and five-ninths. The largest number present at any meeting was fifteen, the smallest seven.

The important committees of the Council were:

A committee to investigate and compile recommendations for the improvement of the City Hospital and its service.

A committee to confer with the Board of Directors of the Cleveland Medical Journal Company as to making the Journal the official organ of the Academy.

A committee to investigate and report as to the alleged selling of vital statistics of the City of Cleveland to certain proprietary remedy concerns.

A committee to represent the Academy in making suggestions and criticisms to the supervising architect of the new hospital for contagious diseases. This cooperation was asked for by the City Administration.

A committee to ask for funds to prosecute State Legislation.

A committee to consult with dentists and veterinarians as to a basis for admission as associate members to the Academy.

A committee to consult with the faculties of the medical colleges upon the proposal that Academy members be admitted to classes.

A committee which went before the State Board of Registration and Examination in connection with the establishment of reciprocity with New York. This has been accomplished.

The standing committees of the Academy, namely—The committee on public health, the committee on legislation, the committee on membership, the committee on program—were active and promptly cared for work under their special supervision.

Inasmuch as the State Legislature was not in session this year the duties of the legislative committee, consisting of W. H. Weir, Chairman; G. W. Crile, R. E. Skeel, J. F. Hobson and Charles Gentsch, were light. The fact that the Secretary was a local member of the State Board of Legislation and Public Policy, to whom the State legislative matters were referred, also has to do with the lessened amount of work coming to the notice of this committee.

It is with gratification that your Secretary has to report that the work of last year's committee in connection with certain of its work attracted the attention of Secretary Garfield of the Department of Commerce and Labor, and their findings are filed in the office of that Department.

The membership committee, consisting of E. S. Lauder, Chairman; A. F. Furrer, E. I. Ludlow, A. H. Bill, H. J. Hartzell, C. A. Lenhart and W. W. Schlesinger, were especially active in making the Academy the largest medical body in the State.

The committee on public health, consisting of R. G. Perkins, Chairman; H. E. Handerson, L. W. Ladd, H. O. Feiss and E. O. Houck, were not confronted by questions requiring any considerable activity.

The program committee, consisting of W. H. Merriam, Chairman; O. T. Schultz, F. W. Hitchings, J. E. Tuckerman, C. C. Stuart, C. G. Foote and C. E. Ford, exercised great care in arranging the programs. It is to be regretted that occasional offense may have been given in omitting certain papers that were deemed unsuitable for presentation.

The important actions of the Council not referred to committees were:

A request to the State Board of Medical Registration and Examination asking for the privilege of having a member of the Academy present, in the interest of fairness, at future State Board examinations to be held in Cleveland. This request was promptly denied.

A suggestion to the State Board of Medical Registration and Examination that they employ conjointly with the State Board of Pharmacy an operator to obtain evidence and investigate charges of illegal practice in this County. Your Secretary has been informed that this has been done, but owing to the laxity of the laws in Ohio no results have as yet been obtained.

The Council, through its committee, was active in the investigation of the contagious ward of the City Hospital early in the year.

The Council, through the public health committee, requested members of the Academy to register with the Board of Health their cases of pulmonary tuberculosis in which the organism was found.

The Council enlisted the aid of the Presbyterian Ministery of Cuyahoga County in support of the efforts of the Academy to exclude fraudulent advertising from journals of this denomination.

The Council closed a contract with the Cleveland Medical Journal Company making the JOURNAL the official organ of the Academy for publication privileges.

The Council investigated the plans and made suggestions, through the Health Officer and architect, to the Board of Charities concerning the new contagious ward of the City Hospital.

The Council recommended to the Board of Charities that the new contagious hospital be open to physicians of the City for the personal treatment of their contagious cases. This suggestion has the approval of the Health Officer.

The Council of the Academy of Medicine took the initiative in the State to attempt to raise a fund of $10,000 for the prosecution of State Legislation.

The Council acknowledged its appreciation of the efforts and support of the Chamber of Commerce in gathering evidence against certain unethical institutions in the city.

During the year over 23,000 notices and communications have been mailed from the office of the Secretary.

CLYDE E. FORD, *Sec'y*.

REPORT OF THE TREASURER FOR THE YEAR ENDING DECEMBER 18, 1907

Total receipts from active members	$1,413.25	
Total receipts from associate and non-resident members	88.50	
Total receipts from all members	1,501.75	
Interest on savings account January 1 to July 1, 1907	15.60	
Total receipts for year 1907	1,517.35	
Total amount paid out, 1907		1,558.93
Deficit for year 1907	41.58	
Balance from last year	438.84	
Balance on hand December 18, 1907	397.26	

WILLIS S. HOBSON, *Treasurer*.

REPORT OF THE AUDITING COMMITTEE

Your committee is pleased to report that they have examined the accounts of your Treasurer and find these correct as reported, all receipts being duly credited and all disbursements properly authorized.

J. E. TUCKERMAN, *Chairman*.

REPORT OF THE CLINICAL AND PATHOLOGICAL SECTION (CONDENSED)

Nine meetings were held during the year with a total attendance of 506, or an average of 56.2 per meeting. The number of papers read was 33. Fourteen patients were presented and 22 specimens were exhibited.

FREDERICK WADE HITCHINGS, *Secretary of the Section*.

REPORT OF THE SECTION OF EXPERIMENTAL MEDICINE

During the year seven regular and no special meetings were held. No regular meetings were held during the months of May, June, July, August and September.

The total attendance was 682, an average attendance per meeting of 98.

Of the seven meetings one, that of February, was a laboratory meeting, held at the laboratories of the Western Reserve Medical College. A large number of demonstrations, grouped under 19 separate heads, were shown. Eleven members of the Section were represented by the preparations shown.

At the remaining six meetings 19 papers were presented under the authorship of 24 names.

At two of these six meetings papers were read by out-of-town guests of the Section. The Section owes much of its success during the year to the liberality of the Council in bringing these visitors to Cleveland.

O. T. SCHULTZ, *Secretary of the Section.*

REPORT OF THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

During the year there have been six meetings held. The number of set papers read were four, the total number of cases presented 19. Reported and not presented 5. Average of attendance at each meeting 15.

C. C. STUART, *Secretary of the Section.*

REPORT OF THE MEMBERSHIP COMMITTEE OF THE ACADEMY

At the December, 1906, meeting of your Council, the usual Membership Committee was appointed, whose duty it would be to secure as members of the Academy those who have not yet united with us, and ever to be on the watch for the new-comer and guide him safely into the fold. In appointing this committee your Council considered not only the individual but also his topographic location.

In accepting this work, your committee was well aware of the excellent work done in former years by other committees and the difficulty it would have in making a good showing because of the comparatively few who were yet non-members.

Early in January your committee met to arrange for a canvass of all eligible physicians. In this it was ably assisted by your energetic Secretary. Each member of the committee was given a list of names of physicians in his territory to be personally interviewed and to whom would be presented the advantages of membership.

It may be well to enumerate these advantages as a reminder of what we receive for our membership fee:

1. Membership in The Cleveland Academy of Medicine.
2. Membership in The Ohio State Medical Association.
3. The Ohio State Medical Journal.
4. The Cleveland Medical Journal.
5. Eligibility to membership in The American Medical Association.
6. An opportunity to meet frequently for mutual recognition and good fellowship, to promote professional honor and integrity, to enlarge our methods and ideas.

Furthermore, it may be added that Life Insurance Companies accept as examiners only those who are members in good standing in their local Society.

How well or how poorly your committee succeeded in its work has been detailed in your Secretary's report. For the success in increasing the membership list the committee does not, by any means, claim full credit, as it is well aware of the excellent work done by individual members of the Academy. Sometimes your committeeman had little or no difficulty in securing the desired application for membership. On the other hand, the most wily and diplomatic presentation of his case would meet with cold and scant consideration. It would serve no good purpose to detail the excuses given by the few who deem it best not to associate with us. We hope they will see the folly of their position and that some future committeeman may succeed in securing and presenting their application, thus adding other links, until we succeed in securing a complete, harmonious and perfectly welded organization.

EDWARD LAUDER, *Chairman of Committee.*

THE REPORT OF THE MILK COMMISSION OF THE CITY OF CLEVELAND FOR THE YEAR ENDING DECEMBER 2, 1907

The Commission has to report no radical changes in the methods of production or handling of Certified Milk over those fully described in the last annual report.

As predicted at that time, milking machines were introduced early in the year to perform in part the work formerly done by hand.

The object was to eliminate as far as possible the annoyances due to the difficulty of hiring and retaining a sufficient force of men for hand milking. Coincident with the introduction of machines the bacterial count increased very materially and continued high as long as the machines were used. Exhaustive investigations by the bacteriologist, Dr Perkins, proved, to the satisfaction of the Commission at least, that the machines were responsible for the high counts, and they were discarded, although their introduction had entailed considerable expense to the owners of the dairy.

Early in the summer high bacterial counts were again found. After repeated and most thorough investigations by the veterinarian, Dr Burrows, with the hearty cooperation of the management of the dairy, had failed to locate the source of the trouble, the bacteriologist made tests of the milk at every step in the production, from the cow to the sealed bottle, and the chief source of contamination was found to be in the cloth strainers, placed over the openings of the milking pails. These strainers were used repeatedly, but were subjected after each milking to a supposedly thorough sterilization by live steam. Bacteriologic examination of the strainers, however, revealed the fact that this sterilization was ineffectual.

The water used on the premises was also examined and was found to contain a rather high bacterial content. The chief organism found was a very resistent nonpathogenic yellow bacillus.

The same organism was also isolated from the cloth strainers even after the strainers had been exposed to steam sterilization for 20 minutes. As no method could be suggested to insure absolute sterilization of the strainers it was decided to discard them entirely with the result that the counts have since been well below the standard of 10,000. In this connection it may be of interest to note that at the meeting of the Milk Commissions of the United States held at Atlantic City last June it was the opinion of the oldest Commissions that cloth strainers should be discarded in favor of pails with hoods over the openings, as it is difficult to sterilize the cloths, thus making them fertile sources of bacterial contamination.

With this exception, the methods used in the production of Certified

Milk are precisely as stated in the last annual report. Certified Cream was placed on the market early in the year. The bacterial counts have corresponded to those of the milk. The chemical examinations have been satisfactory, and the demand up to the expectations.

SALES FOR 1907.

MONTHLY SHIPMENTS OF MILK.

Months.	Quarts.	Pints.	Bottles.	Total Quarts.
			537	429
January	9,948	6,714	16,662	13,305
			529	413
February	8,304	6,498	14,800	11,553
			580	454
March	10.160	7,817	17,977	14,069
			647	512
April	11,277	8,141	19,418	15,347
			684	546
May	12,621	8,594	21,215	16,371
			686	546
June	12,176	8,390	20.566	16,371
			691	556
July	13,076	8,345	21,421	17,349
			770	564
August	12,691	9,600	23,874	17,491
			757	581
September	12,713	9,446	22,710	17,436
			759	565
October	13,172	8,738	23,520	17,558
			756	550
November	13,016	8,090	22,700	17,061
			712	544
December	*12,648	*7,432	*21,080	*16,864

*Estimated.

For several months the dairy has been worked to its full capacity, viz., 90 cows. On numerous occasions the supply has not been equal to the demand, due not to lack of foresight on the part of the management, but to the sudden and unforeseen shortening of the supply on the part of the herd resulting from the unusual season. (This is one of the many trials incident to the dairyman's calling.)

To meet the expected increased demand the coming year, a new barn and milk house will be built. The present milk house is inadequate for efficient service.

Last March a change in the personnel of the dairy force was made. Mr. A. F. Bennett, a graduate of the Agricultural Department of the University of Wisconsin, was placed in direct charge as Superintendent.

Mr. Bennett lives and spends his entire time at the farm, and superintends the production of the milk in all its details. The Commission feels that Mr. Bennett's supervision will ensure the strict observance of its regulations at all times.

Early in the year a request was received to send representatives from the Commission to a meeting of the Milk Commissions of the United States to be held at Atlantic City in June last. The Secretary and Assistant Secretary were appointed delegates, but as the Secretary was unable to attend, Dr Moorehouse alone represented the Cleveland Commission. A permanent organization was formed to be known as the American Association of Medical Milk Commissions, for the purpose of discussion and mutual aid in furthering the objects of the various Commissions. Dr Moorehouse reported a profitable meeting. Annual meetings are to be held on the day previous to the meeting of the American Medical Association and at the same place.

The Commission regrets to report the resignation of Dr Moorehouse as

Assistant Secretary, a position he held since the organization of the Commission. Whatever success has been achieved in promoting the objects of the Commission has been due, in no small measure, to Dr Moorehouse's faithful performance of his duties and his mastery of the numerous details of this office. The Commission hopes for his success in his new field of activity.

Dr A. F. Furrer has been selected to fill the vacancy caused by Dr Moorehouse's resignation.

Hitherto, the control of the production of Certified Milk has been held by the Commission solely by verbal agreement and mutual understanding between the producers and the Commission. While this arrangement has been entirely satisfactory and the relations amicable to a degree, it has been felt for some time that possible friction and misunderstanding in the future would be obviated by putting the agreement in legal form. To this end a contract has been drawn up and duly signed by both parties embodying all the details for the production and handling of the milk previously adopted. This contract agrees closely with that drawn between the first Milk Commission formed, that of Essex Co., New Jersey, and the first producer of Certified Milk, and which is generally acknowledged to be a model.

In conclusion the Commission would urge all physicians ordering Certified Milk to report at once to the Secretary any complaints of whatever nature they desire to make.

In spite of the most careful regard for details, slight errors will at times occur, and the Commission invites the criticism and expects the cooperation of the profession at all times.

J. J. THOMAS, *Secretary of the Commission.*

PROGRAM

Dudley P. Allen gave an address upon Unusual Tumors of the Breast. He presented a series of cases, with specimens, photographs and water colors, illustrating rare diseases of the breast. He also made mention of points of peculiar interest associated with other cases. The following is a brief resume of the subject presented.

CASE I. Hypertrophy of a single male breast. The case was one of two operated upon at about the same time. In each case one breast only was enlarged and was the seat of much pain. The breast had been gradually increasing in size for four months. There was no history of trauma. The gland was the size of a virgin's breast. Microscopic examination showed great thickening of the fibrous tissue elements around the acini and some increase in the number of glandular elements. There was nothing malignant. It was removed on account of pain.

CASE II. An extensive sarcoma of the male breast. The tumor was removed, but later recurred, the patient dying of the disease.

CASE III. A carcinoma en cuirasse. The patient was a male. The right breast was extensively involved with a carcinomatous growth, the breast being retracted. Nodules extended across the front of the thorax to the other breast which was involved in the disease to a less degree than the first breast.

CASE IV. A tumor of the breast, the size of an egg, which had existed for about 36 years. Dr Horace A. Ackley, whose professional career terminated in Cleveland about 1859 had told the patient that the growth was benign, but about 1886 the patient insisted upon the removal of the growth. It was found to be dense and of bony hardness and on decalcification proved to be a fibro-adenoma.

CASE V. An unusually large fibroadenoma in the breast of a girl 16 years of age. The growth had taken place during four months. The tumor was elastic and a diagnosis of sarcoma had been made before operation. Microscopic section showed the case to be one of fibroadenoma.

CASE VI. A scirrhus carcinoma in the breast of a woman 73 years of age. She had had an abscess at the point at which the carcinoma had developed 52 years before. The question of trauma and inflammation as the cause of carcinoma was discussed.

CASE VII. A case of carcinoma. The patient was examined 13 years ago on account of a small tumor on the outer side of the breast. This was supposed to be a slightly inflamed and indurated lobe of the breast. A year later the patient had a child, but had no trouble with the breast. About four months before operation she noticed a tumor at this point. It proved to be a carcinoma. The fact that the tumor did not grow during lactation rendered it probable that at that time the growth was not carcinomatous. The development of a carcinoma at this point, however, raises the question of the possibility of old inflammatory conditions of the breast developing later into carcinoma.

CASE VIII. A case of fibromyoma of the uterus followed by carcinoma of the breast. Two and a half years ago the patient was operated upon for a fibromyoma of the uterus. Five weeks later she left the hospital. A week later she noticed a lump in her breast. This was removed and found to be a carcinoma. About two and a half years after this time the patient died with secondary carcinomatous development in the ribs at the seat of the growth, in the liver, the adrenal glands and the head of the right femur. Microscopic examination of the tumor of the uterus made at the time of its removal had disclosed no evidence of malignancy. The question arises if some malignant portion may not have escaped notice.

CASE IX. A carcinoma occurring in the breast of a woman 32 years of age, during lactation. An attempt was made to stop the flow of milk, but the breast increased rapidly in size during the attempt, so that an operation was performed without more delay. Before the patient had recovered from the operation, she began to suffer very great pain in the lumbar region and in the region of the liver. The liver increased very rapidly in size, the growth being the most rapid the speaker had ever seen, and the patient died a short time afterward from secondary development of the disease. The case was cited to illustrate the very rapid development of malignant growths of the breast occurring during lactation and also as illustrating the fact that the growth of carcinoma is often very rapid when occurring at an early age.

CASE X. Tuberculosis of the female breast. The fact was pointed out that in tuberculosis of the female breast the secondary glandular involvement often follows along the lower border of the pectoralis major muscle out toward the axilla. In this respect it varies from carcinoma, in which the development of enlarged glands is first seen in the axilla with the intervening spaces between them and the breast itself uninvolved.

CASE XI. A case of mastodynia. The patient had been presented as in a hopeless condition from carcinoma. She suffered great pain in the breast. There was absolutely no evidence whatever of carcinoma and the patient lived four years, dying from what her physician called general neuralgia. This case was differentiated from those in which painful and tender breasts occur, often associated with evidences of intercostal neuralgia.

CASE XII. A cyst of the breast followed bv carcinoma. A cyst had been diagnosed and incised. A small granulating point appeared in the cyst wall. It was thought to be without significance. The cyst was packed and healed all except a small sinus. A few weeks later the wall of the sinus became indurated and the glands of the axilla became enlarged. The breast was removed and the axilla was cleared. The growths proved to be carcinomatous. The necessity for the examination of the walls of single cysts was pointed out, since they are sometimes carcinomatous, although they may be benign.

CASE XIII. A case of multiple cystic degeneration of both breasts associated with intense pain, often called Maladie de Reclus. The patient was 47 years of age. She suffered intense pain in both breasts, the pain extending down the sides of the thorax and the arms. The pain was so great that the breasts were removed. Later the pain continued, and an inflammatory condition appeared month after month over the breasts with exfoliation of the epidermis, leaving the exposed and reddened derma below. It was thought originally that the irritation might have been due to applications, but the recurrence of the phenomenon at successive monthly periods threw doubt upon this point. A water color of the patient's breasts showed the destructive process taking place in the skin.

CASE XIV. Sarcoma of both breasts. The patient was 19 years of age. Nine weeks before admission to the hospital she struck her breast against a sharp object. She suffered much pain and that night the breast was swollen. A little later a lump appeared at this point. The breast increased in size and was treated by strapping and pressure and the internal administration of the iodid of potash. Later the breast was incised as it seemed to be fluctuating, and it was thought pus was present, but only blood escaped. The other breast also became enlarged, and both breasts grew rapidly until one had a circumference of 26 inches and the other of 22 inches. The vertical measurements were 9½ inches in one and 6½ inches in the other. The breasts were raised above the thorax, with the patient in the recumbent position, respectively 5½ and 5 inches. The patient lost rapidly in general condition, the sensation in the lower extremities disappeared, and finally both legs were completely paralyzed. The urine, which had been normal, increased in amount to 10,000 c. c. daily. The patient's gums were enlarged until they were level with the teeth and covered half of the hard palate. The tonsils entirely filled the pharynx. A growth appeared in one groin. At death, about 14 weeks after the injury, the patient had the most extensive secondary involvement of various organs. Microscopic sections showed growths in the breasts and in the organs secondarily involved to be round celled sarcoma. The organs involved were the heart, the groin, the tonsils, the lymph glands, the stomach, the duodenum, the liver, the pancreas, the spleen, the kidneys, the adrenals, the ovaries, the uterus and the spinal cord. The growth was the most rapid and the secondary involvement by far the greatest that the speaker had ever seen.

The following are applicants for active membership: Richard A. Bolt, David A. Prendergast, Henry K. Yaggi, John E. Maska, Edward H. Snyder, Harry T. Sloan, David A. Alsbacher, George S. Lewin, Eugene Spenzer, Norman W. Ingals, Ulysses M. Bachmann, Samuel A. Young, Francis P. Corrigan. Associate membership: Maulsby W. Blackman.

CLINICAL AND PATHOLOGICAL SECTION

The forty-sixth regular meeting was held Friday, December 6, 1907, at the Cleveland Medical Library.

The following officers were elected for the coming year: Chairman, Walter G. Stern; Secretary, Frederick Wade Hitchings; Councillor, Walter G. Laffer.

W. G. Stern exhibited a patient, a boy, with tuberculous fistulæ of the ninth rib and sternum. He had treated this patient with tuberculin and von Bier's passive hyperemia by means of a suction cup. Good results were obtained in eight weeks, but the time was too short to fully establish the permanency of the cure. He believed that more credit was due to the tuberculin than to the other treatment. The paper was discussed by W. H. Humiston, M. J. Lichty and O. T. Maynard. The discussion was closed by W. G. Stern.

C. A. Hamann read a paper entitled, Some Remarks on the Anatomy and Surgery of the Ureter. Attention was called to the course and relation of the ureter, to the frequency of spindle-shaped dilations and of tortuosities in that tube and to the normal points of narrowing just below the pelvis of the ureter, at the brim of the pelvis and in the bladder wall. The relation of the pelvis to the vessels at the hilum of the kidney was described and attention called to the occasional presence of a vein or veins posterior to the pelvis. The ureter is fairly well supplied with blood and may be laid bare for a distance of an inch or more without danger of necrosis. A venous plexus surrounds the lower end, and this part of the tube is also enclosed in a fibro-muscular sheath. Ureteral calculi can be most satisfactorily located by the X-rays, their symptomatology being rather vague and uncertain. The extraperitoneal incision in the flank and above Poupart's ligament was advocated as the most satisfactory route for exposing the ureter in all parts of its course, and the technic of the operation was described. In the discussion the opinions varied as to whether the normal ureter could be palpatated in the female or not. The paper was discussed by H. Robb; G. W. Crile, who spoke of the advantage of a radiograph taken of the bougie in the ureter; C. G. Foote, who mentioned the use of a waxed-ended bougie to obtain an impression of the stone if present; W. H. Humiston; F. E. Bunts; A. W. Lueke; W. E. Lower, who believed that a small stone low down in the ureter should be given time to pass without operative interference, and A. S. Maschke. C. A. Hamann closed the discussion.

W. E. Lower read a paper on Surgical Diseases of the Kidney. The value of improved methods of diagnosis in cases of renal disease was emphasized. These include cryoscopy, the determination of the electric conductivity of the urine, observations upon the excretion by the kidney of such substances as phloridzin, etc., cystoscopy and ureteral catherization, and the use of the X-rays. A brief resume of the author's clinical experience, based upon 86 cases, was then given, with notes on the operative technic. (A full abstract of this paper may be found in the Ohio State Medical Journal, December 1907, page 347.) C. G. Foote and W. S. Hobson took part in the discussion which was closed by W. E. Lower.

S. L. Bernstein presented a paper upon Achondroplasia (appearing in full in this issue). Discussed by A. S. Maschke, G. I. Bauman and J. J. Thomas, who spoke of the importance of being able to show the parents that the mental condition of the child was not likely to be affected in the course of the disease. Discussion closed by S. L. Bernstein.

H. B. Ormsby read a paper entitled Veronal Dermatitis—Report of a Case (appearing in full in this issue). Discussed by N. Rosewater; E. O. Houck, who reported a case of veronal poisoning, in which there was an eruption, like that usually present in scarlet fever, and edema of the hands and feet; and S. S. Berger, who reported the death of a patient suffering from chronic bronchitis, to whom four, five grain doses of veronal had been given at intervals of two hours; no cause of death other than the veronal could be discovered. H. B. Ormsby closed the discussion.

Experimental Medicine Section

The thirty-fifth regular meeting was held at 8 p. m., Friday, December 13, 1907, at the Cleveland Medical Library. The following officers were elected for the ensuing year: Chairman, C. A. Hamann; Vice-Chairman, D. Marine; Secretary, O. T. Schultz; Councillor, T. Sollman.

C. Sihler gave a paper on the Histology of the Submaxillary Gland. He said in part that he had demonstrated the presence of numerous nerve fibrils upon the capillary walls of the submaxillary gland, while he had been utterly unable to demonstrate any nerve fibers in connection with the gland cells. He therefore believed that the formation of lymph necessary for the secretion of saliva can be amply explained by the protoplasmic activity of the cells of the capillary wall and that a specific action of the gland cells themselves is not necessary to extract the necessary fluid from the blood in the capillaries, when the chorda typani is stimulated. The activity of the gland cells in increasing the salivary pressure is, of course, not denied. The paper was illustrated by a large number of drawings. J. J. R. Macleod and H. W. Rogers took part in the discussion which was closed by C. Sihler.

G. W. Crile read a paper entitled Further Studies in the Direct Transfusion of Blood. The previous experimental and clinical work upon direct transfusion of blood, together with its limitations and indications, were first reviewed. The effects of over-transfusion in animals was then considered, showing that if too large an amount of blood be transfused or if it be done too rapidly, death occurred from dilatation of the heart and edema of the lungs. If the process be discontinued upon the first appearance of symptoms of these complications and if in addition bleeding and compression of the thorax be done, recovery will usually occur. On this principle it is apparent that rhythmic compression of the chest, by expressing blood from the heart, aids in overcoming the dilatation and will no doubt prove a useful measure in clinical cases of acute cardiac dilatation. An excessive transfusion slowly given, so as not to cause cardiac dilatation or pulmonary edema, will still cause death from asphyxia due to engorgement of the abdominal vessels and fixation of the diaphragm or from rupture of the liver or other viscera. By avoiding extremes of over-transfusion or too rapid transfusion, a moderate degree of over-transfusion is safe and will establish a circulatory equilibrium not easily disturbed by nervous influence other than by the vagus, provided that there be no cardiac insufficiency. This is, in part, due to an over-filling of the vessels and the utilization in a physical manner of their elasticity to maintain the blood-pressure. The abnormally high blood-pressure so obtained, in the absence of hemorrhage, will entirely prevent the development of surgical shock by any possible degree of trauma; thus, in dogs, even decapitation could be performed without fall of blood pressure if hemorrhage were controlled. This resistance to shock decreases with time, but by the next day it is still greater than normal. These practical deductions have therefore been made: (1) That in normal conditions the circulation of a patient ought to be maintained against trauma and perhaps other depressing factors by a carefully conducted transfusion. (2) That such transfusion must be done with the best physiologic judgment, so that on the one hand the heart will not be over-taxed and pulmonary edema will not be produced, and on the other that the liver and other viscera may not be damaged. (3) That in cases of impaired myocardium or in case of other serious heart lesion, or in any case in which the physiologic functions of the heart muscle or the heart as a whole is impaired a risk would be taken, certainly a great risk in a large transfusion, and more or less risk in any transfusion. (4) That in the event of an acute dilatation of the heart through transfusion or other cause the head-up posture plus rhythmic pressure upon the chest and, perhaps, plus bleeding, is the rational and most effective treatment.

The clinical application of such measures has been proved by their employment in patients much reduced from hemorrhage, cachexia, infections, etc., and who were poor surgical risks; after abundant transfusion they were converted into safe risks and have successfully undergone extensive surgical procedures, which would have been surely fatal without the preliminary transfusion.

The question of possible hemolysis between the blood of the donor and that of the recipient is most important and should therefore be settled previous to the transfusion. It has been noted that the serum of patients suffering from sarcoma hemolyzed normal red cells, but the patients' red cells were not affected by normal serum; also that in two patients with sarcoma the serum of each hemolyzed normal red cells, but not the red cells of each other. The serum of a carcinoma case hemolyzed the red blood cells from a sarcoma case and vice-versa and each destroyed the red cells from a normal patient. The juices of malignant tumors possessed a hemolytic property similar to that of the serum of the same patient. Neither the juices of non-malignant tumors nor the serum of these patients were hemolytic for normal red cells and the same is true in cases of Grave's disease and some other maladies. Active hemolysis was noted in some cases of chronic infection. The valuable practical point of these investigations is that we can accurately determine in advance whether the donor's blood cells will be destroyed by the recipient's serum or whether the donor's serum will hemolyze the recipient's red cells; if no hemolysis occur, there will be no risk in transfusion.

Experimental transfusion for sarcoma has been carried out in collaboration with Beebe, of New York. The animals used were dogs suffering from an inoculable, rapidly growing sarcoma. Ten dogs, with such advanced sarcoma that they were clinically doomed, were transfused from immune animals; eight recovered and have remained perfectly well since; one was killed in a fight and in the other instance the donor was subsequently proved not to be immune. The immunity of the donors was determined either by their spontaneous recovery from the sarcoma, which, after inoculation, had grown to a certain extent; or from the entire failure of inoculations to take; or from the recovery from the inoculated tumor as a result of transfusion from other immune dogs. In some dogs as many as three transfusions were required to cause complete disappearance of the growth, the improvement after each transfusion, however, was marked, even if incomplete. Previous to the transfusion the recipient was bled to the uttermost degree and then over-transfused from a donor of large size. Clinically nine human patients with carcinoma have been transfused from normal donors without beneficial results. Four patients with sarcoma have been transfused from normal donors; in one case with only temporary improvement; in a second case without any improvement, probably owing to the fact that preliminary bleeding was impossible as the patient's serum was hemolytic to normal red cells; a third case of renal sarcoma is too recent for the results to be judged; the last case, a patient with an extensive sarcoma of the upper jaw, was transfused and the tumor removed six months ago; so far there has been no recurrence. Discussion by C. Sihler.

THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The thirty-first regular meeting of this Section was held Friday, November 22, 1907, at the Cleveland Medical Library.

D. B. Smith presented a case of spontaneous dislocation of the lens of the right eye which occurred seven weeks previously. The lens was movable in the vitreous, vision was reduced to about one-fourth of normal and was not benefited by any glass. The views of members as to the advisability of removing lens, when within the vitreous, were requested. In his own experience he had operated upon two such cases: in one successfully, but in the other he could not obtain the lens. In discussing the case, A. R. Baker, W. E. Bruner and C. H. Rust advised against operation.

A. H. Marvin presented three cases: Case I—Female with partial aphonia for eight months, paralysis of recurrent laryngeal of the right side with large goiter of same side; had been under treatment with thyroid tablets, iodids and electricity. He desired discussion, after examination of the case, as to whether the goiter was the cause of the paralysis and would be relieved by a thyroidectomy. Case II—male, aged 31, laborer, when seen first had a dyspnea of four days standing which had had a gradual onset for four years; tracheotomy had been recently performed. Patient had a tumor of the larynx; it had a soft warty appearance and its base extended across the larynx. Expression from the members as to the kind of tumor was requested Case III—female, aged 24, complained of foul breath and nasal discharge. Personal history: measles at age of five, and scarlatina at seven; affection of the eyes, beginning in one eye and going thence to the other and lasting nine weeks with slow restoration to almost normal vision (interstitial keratitis). At 11 years, had sequestrum removed from right tibia and a year later one from left tibia. For past 18 months, patient had had a foul odor to breath, and discharge of pus from nostrils. Examination revealed a necrosis of the floor of the nose with fistulous communications to incisor teeth; all the front teeth were loose and the alveolus necrotic. Right wrist was swollen and nodes upon each tibia. At this time, necrosed bone was removed as far as possible, teeth were extracted and mercurials and iodids given internally. One year later, patient returned showing deformity of right wrist. A radiograph was taken and showed that the lower portion of the ulna and a portion of the radius had been absorbed and there was a dislocation of the wrist. At present, the hard palate is almost totally necrotic; fistulae connect with the alveolar margin. Diagnosis hereditary syphilis. A discussion as to the best method of treatment of the necrotic bone was desired.

In discussing these cases, S. H. Large considered the enlarged thyroid the cause of the paralysis in the first case. J. N. Lenker did not consider the thyroid the cause of paralysis in the first case, as it seemed to him not to be solid enough; in his own experience he had a case of laryngeal paralysis in which, after the thyroid was removed, there was still a paralysis. He considered case II to be one of enchondroma. A. R. Baker thought the hysterical element should always be considered in such a case as the first, he thought this particular instance to be an exophthalmic goiter. In closing the discussion, A. H. Marvin said in regard to case I that he did not want to delay operation too long on account of danger to the recurrent laryngeal nerve. In regard to case II, a section of the growth had been removed and sent to the pathologist for examination and was by him pronounced to be "a flat-celled papilloma, a variety of epithelioma; not malignant now but liable to become so." In regard to case III, the question had been with him what to do with the dead bone in the nose. Iodids and oleate of mercury had been used internally, although the general treatment of the case had not been in his hands.

A telegram was read from George F. Suker, of Chicago, who was to have given an address, regretting his inability to be present, as he had been unavoidably detained in Chicago.

C. C. Stuart read a Report of a Case of Paralysis of the Accommodation (see page 21). In discussing this paper H. G. Sherman reported a case of maximum dilatation of the pupil in a child, after adrenalin and homatropin had been instilled; dilatation persisted for a long period. A. R. Baker reported a case of paralysis of the accommodation and dilatation of the pupil, due to trouble with the teeth. J. E. Cogan reported a similar case due to diphtheria. Discussion closed by C. C. Stuart.

The Lakeside Hospital Medical Society

The twenty-third regular monthly meeting was held Wednesday, November 27, 1907.

E. H. Cox showed a patient with Cerebral Tumor, and reported a Case of Fracture of the Head of the Tibia, with Exhibition of Radiographs.

A. B. Eisenbrey presented a patient showing Acute Plumbism.

C. L. Cummer showed a Case of Pernicious Anemia, with Exhibition of Blood Preparations.

H. C. Russ exhibited Two Cases of Acne Successfully Treated by Opsonins.

C. W. Stone showed a Case of Arthritis Deformans and a Case of von Recklinhausen's Disease (Multiple Neurolipomata).

H. Robb reported a Case of Suspension of the Uterus Followed by Two Normal Deliveries and the Findings at a Subsequent Abdominal Section.

W. H. Weir reported a Case of Hydatidiform Mole, with Exhibition of Specimen.

J. R. Beiter reported a Case of Fatal Gun-Shot Wound of the Back, with Exhibition of Radiographs.

E. H. Hutchins reported Cases of Adenocystoma of the Ovary, with Exhibition of Specimens.

L. W. Ladd exhibited a Slide Showing Very Numerous Tubercle Bacilli.

J. Hewitt presented several Pathologic Specimens.

The twenty-fourth regular meeting was held Wednesday, December 18, 1907.

E. F. Cushing presented a patient with Osteitis Deformans and showed radiographs.

W. J. Abbott presented a case of Alveolar Abcess, Communicating with the Nasal Cavity.

J. R. Beiter presented a patient with Vesical and Renal Calculi and showed radiographs.

L. W. Ladd showed a patient with Acne Vulgaris after Treatment with Opsonins.

J. H. Lowman showed a case of Collapsed Empyema and exhibited radiographs.

A. B. Eisenbrey showed a case of Splenomyelogenous Leukemia and exhibited blood preparations.

E. H. Cox presented a patient with Esophageal Strictures.

C. W. Stone showed a case of Hypertrophic Biliary Cirrhosis of Liver with Interesting Cultures from the Liver, Spleen and Blood.

H. G. Sloan reported a Case of Combined Tuberculosis of the Appendix and Carcinoma of the Cecum.

C. F. Hoover reported a case of Acute Encephalitis Simulating Brain Tumor.

F. W. Vincent reported a Case of Postoperative Insanity.

H. Robb reported a Case of Periurethral Abscess.

J. H. Hewitt exhibited a Horse-shoe Kidney and Pathologic Specimens showing Generalized Carcinomatosis.

Charity Hospital Medical Society

The November meeting was held Wednesday evening, November 13, 1907. (1) Carcinoma of Liver; Report of Case, W. H. Merriam; (2) Acute Myelitis; Presentation of Case, W. H. Rieger; (3) Psoriasis; Presentation of Case, R. A. Bolt.

St. Alexis Hospital Alumni Association

The regular meeting of the St. Alexis Hospital Alumni Association was held at the Hollenden Thursday, December 5, 8 P. M. Program: A Paper, Dr J. V. Gallagher; Gasserian Ganglion Removal, Dr Handmacher; Rhinological Notes, Dr W. H. Tuckerman.

Cleveland Medical Library

The annual meeting of the Cleveland Medical Library Association, for the hearing of reports and the election of officers and trustees, was held at the library building on December 9, 1907. The former officers were re-elected, viz: Harris G. Sherman, President; D. H. Beckwith, Vice-President; W. E. Bruner, Treasurer; H. L. Sanford, Secretary; C. A. Hamann, Directing Librarian.

The trustees elected, to serve for three years, were: W. T. Corlett, G. W. Crile, H. O. Feiss, C. F. Hoover, J. M. Ingersoll, W. E. Bruner, J. H. Lowman, J. B. McGee, H. Pomeroy, H. G. Sherman.

The Executive Committee of the Board of Trustees are: H. E.

Handerson, F. E. Bunts, C. E. Briggs, B. L. Millikin. H. D. Bishop, J. M. Ingersoll, J. B. McGee, Wm. Lincoln, W. E. Lower.

The President called attention to the Nurses' Bureau, showing how it may be made a source of revenue to the library, as well as a great convenience to the busy doctor; instancing the Bureau of Nurses of the Boston Medical Library; this latter was established in 1879, and has been a source of revenue to the extent of from $2,000.00 to $4,000.00 a year; also the Bureau of Nurses of the Library of the College of Physicians and Surgeons of Philadelphia, which also yielded an income of over $2,000.00. It rests with the members who employ nurses to make the Nurses' Bureau of the Cleveland Medical Library Association a success, and to materially aid the library in its finances. The attention of out-of-town physicians is called to the Bureau, calls may be made at any hour of the day or night and any day in the year.

He also mentioned that he had asked a number of physicians to give him a list of books, which in their estimation should be in the Library, only one had complied (J. J. R. Macleod), and he was pleased to report that through the kindness of Mr. W. D. B. Alexander these books had been ordered. (Since the annual meeting these books have been received and placed on the shelves, where they may be consulted by the members.)

They are as follows:

Luciani—Physiologie des Menschen, 2 volumes.
Nagel—Handbuch der Physiologie des Menschen, 7 volumes.
Von Bunge—Lehrbuch der Physiologie des Menschen, 2 volumes.
Arrhenius—Immunochemistry.
Aberhalden—Physiologische Chemie.
Landois—Lehrbuch der Physiologie.
Schaefer—Text-Book of Physiology, 2 volumes.
Hill—Recent Advances in Physiology.
Howell—Physiology.
Stewart—Manual of Physiology.

W. E. Bruner, treasurer, presented his report which showed that the library closed the year without a deficit.

C. A. Hamann, directing librarian, reported the following books on the shelves in the stack room:

Bound Volumes of Journals	3,609
Unbound Volumes of Journals	1,529
Medical Society Transactions	1,358
Hospital and Board of Health Reports	462
Pamphlets, Inaugural Dissertations, Theses	5,094

(There are about 3,000 Pamphlets and Inaugural Dissertations to be catalogued. The various other books were not counted, as they are to be re-classified, and some, which are duplicates, may have to be thrown out.)

The number of books borrowed by members during the year was 590, an increase of 119 over the previous year. The number of books borrowed from the Library of the Surgeon General's Office during the year is 98 volumes. The number of journals subscribed for by the Library, 66. New Books purchased during the past year, 23.

Donations for the year amount to: Bound volumes, 1,087. Unbound, complete volumes, 200. Numbers of Journals, 2,636. Pamphlets, Inaugural Dissertations, etc., 2,636.

Among the donors of books who should be especially mentioned are: D. H. Beckwith, H. E. Handerson, C. A. Hamann, T. A. Elder, Wooster, O.; E. F. Cushing, Hunter Robb, and the Library of the College of Physicians and Surgeons of Philadelphia, and B. L. Millikin.

Through H. H. Powell, Ralph King, Esq., presented the Library with a fund for the purchase of books on Pediatrics, and so far there have been 55 volumes purchased.

The thanks of the Library are due to the Editor of the CLEVELAND MEDICAL JOURNAL, who kindly turns over all the journals received in exchange.

The following new journals have been added during the year:

Zeitschrift für Hygiene und Infektionskrankheiten.
British Journal of Children's Diseases. (Complete.)
Journal of Pathology and Bacteriology.
Journal of Physiology.
Archives of Ophthalmology.
Archives of Otology.
Review of Neurology and Psychiatry.
Wiener Klinische Wochenschrift. (Complete.)
The Quarterly Journal of Medicine.

B. L. Millikin proposed the starting of a "New Book Fund," and headed the list with a substantial contribution, before the close of the meeting over four hundred dollars ($400.00) was subscribed to this fund, and since then there has been such a generous response by the members that it now amounts to nearly one thousand dollars ($1,000.00).

After the close of the meeting refreshments were served in the club rooms.

Book Reviews

Hygiene of Nerves and Mind in Health and Disease, by August Forel, M. D. Formerly Professor of Psychiatry in the University of Zurich. Authorized translation from the second German edition, by Herbert Austin Aikins, Ph. D., Professor in Western Reserve University. G. P. Putnam's Sons, New York and London, The Knickerbocker Press. 1907.

The implications of a work on mental and nervous hygiene are, as the subject is seen by Forel, sufficiently varied to tax the resources even of a book of three hundred and odd pages. The eminent author begins with an attempt to delimit spirit and mind, follows with an account of the anatomy and physiology of the nervous system, of the embryology and race history of man, and the pathology of the nervous system, and with these as a basis discusses, in the remaining hundred pages, the means of avoiding sickness of the mind and the nerves.

The result is not meant to be, and is not, a presentation of original thought. It is a summary of what is known, or at any rate what is believed about the intricate relations existing in the common meeting-ground of mind and matter. So condensed a statement of the three sciences of psychology, neurology and psychiatry is not easy reading for the novice. It is a book for the learner to study, and for this purpose is well done.

The translation is admirable, the statements succinct and clear, and the tone of the whole book dignified and conservative. This is true in spite of the author's special study of hypnotic methods, possibly because his work in that field has been careful rather than sensational. His views on the pernicious effects of poisons, especially alcohol, on mind and nerves, are much to be commended.

The book is well printed and bound, and the proof-reading, in spite of a few minor errors, is carefully done.

Laboratory Guide for the Modeling of the Human Bones in Clay, by Vilray Papin Blair, A. M., M. D., Associate Professor of Anatomy, Medical Department, Washington University. 1906. Published by the Co-operative Association of the Medical Department of the Washington University, St. Louis, Mo.

As stated in the author's introduction, "the object of this guide is primarily to lay down specific directions for the moulding of the human bones in clay." These directions are given in such brief and concise form, that they will undoubtedly be a great aid to the student in his study of osteology. A few questions referring to the form of each bone follow the instructions for its reproduction in clay.

The Diagnosis and Treatment of Diseases of Women, by Harry Sturgeon Crossen, M. D., Clinical Professor of Gynecology, Washington University; Gynecologist to Washington University Hospital and Chief of the Gynecological Clinic; Associate Gynecologist, St. Louis Mullanphy Hospital; Consulting Gynecologist to Bethesda Hospital, St. Louis Female Hospital and St. Louis City Hospital; formerly Superintendent of the St. Louis Female Hospital; Fellow of the American Association of Obstetricians and Gynecologists; Ex-President of St. Louis Obstetrical and Gynecological Society; Member American Medical Association, Mo. State Medical Association, St. Louis Medical Society, etc. With 700 illustrations. C. V. Mosby Medical Book and Publishing Company, St. Louis. 1907.

This work is quite unique in gynecologic literature, although in other departments of medicine a considerable number of monographs have appeared upon diagnosis and treatment. At first one would be strongly inclined to criticize on general principles the consideration of clinical data separate from its associated scientific features as tending to emphasize a weakness which has always been prevalent in American medicine. A thorough examination, however, does much to disarm such criticism by the many excellent, although somewhat elementary, chapters. In fact as a whole the work is a series of monographs upon the various phases of gynecologic examination, symptomatology, treatment, diseased conditions, and operations. Its colloquial style and the many quotations from papers written by the author lessen somewhat its scientific value, but more than compensate for this by their strictly practical character and undoubtedly make it much more interesting reading; two striking examples of this are found in the chapter on uterine myoma and extra-uterine pregnancy. It is not unjust to say, however, that with all its many valuable and instructive illustrations there are some which show nothing of any value whatever, and these, together with the pages of prescriptions, might well have been left out.

On the whole this book by Crossen fills a distinct niche in the library of the general practitioner, especially if it is used exactly as contemplated, for its points are generally well made and its conclusions in harmony with the most advanced gynecologic thought.

The Physicians' Visiting List for 1908. P. Blakistons' Sons & Co. Philadelphia, Pa.

A very convenient visiting list, handsomely bound in leather and containing tables of doses, weights and measures and a considerable amount of information likely to be required in emergency cases, such as antidotes and treatment for poisons. Incompatibilities, various tables, etc., are also given.

Squibb's Materia Medica 1908 Price List. A Complete Alphabetical List of the Squibb products, embracing the articles in the U. S. P. (VIII Revision) and the National Formulary, together with the non-official chemicals, etc., etc. E. R. Squibb & Sons, New York and Brooklyn.

Although this is issued as a price list, it is nevertheless a very handy book of reference for the physician as it contains all the U. S. P. and N. F. preparations, with full descriptions as to source, characteristics, process of manufacture, strength, dose, therapeutic indications, etc., etc. In addition are included the special non-official preparations manufactured by this firm.

A Text-Book of Physiology. By Isaac Ott, A. M., M. D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Second revised edition. Illustrated with 393 half-tone engravings, many in colors. Royal octavo, 815 pages. Bound in extra cloth. Price $3.50, net. F. A. Davis Company, Publishers, 1914 Cherry St., Philadelphia, Pa.

In physiology, perhaps more so than in any other branch of medical science, there has been within the past few years a regular plethora of new text-books. Justification for the publication of such books may be claimed partly on the score of advance in knowledge and partly because of the growing recognition on the part of the medical profession of the supreme importance of Physiology, not only as a college course but as a postgraduate study. To justify their existence, however, the books should come up to a high standard as reviews of recent progress, and they ought to be well balanced with regard to the relative importance which they ascribe to recent discoveries as compared with already established facts. Each chapter should be worked up so as to be in equal tone with all others.

In the work before us there are many good chapters (*e. g.*, those on the nervous system, special senses, etc.) but there are others which are distinctly below the standard which one would hope for.

The chapters on the Circulation, Respiration and Metabolism are somewhat disappointing. There is no adequate description of the recent work of Langendorff and others on the perfusion of the mammalian heart outside the body; Carlson's experiments are not mentioned; Haldane's most important contributions to our knowledge of respiration are omitted. Apnea is discussed in one brief paragraph. The chapters on Metabolism —exclusive of that on animal heat—are out of date; for example, no consideration is taken of Folin's work, nor of the more recent work of Burian on the source of endogenous purins.

The volume is bulkier than usual for this class of book, much unnecessary space being devoted to anatomic descriptions; and in its general arrangement there are several faults, for example, the subject of

Immunity, etc., is considered under the chapter heading of Circulation, and the sudden change from the one subject to the other that occurs on page 291 is distinctly confusing.

A Standard Dictionary of the English Language Upon Original Plans, Designed to Give, in Complete and Accurate Statement, in the Light of the Most Recent Advances in Knowledge and in the Readiest Form for Popular Use, the Orthography, Pronounciation, Meaning and Etymology of all Speech and Literature of the English Speaking People. A new edition, revised and enlarged. Prepared by more than two hundred specialists and other students, under the supervision of Isaac K. Frank, D. D., LL. D., editor-in-chief; Francis A. March, LL. D., L. H. D., consulting editor; and Daniel S. Gregory, D. D., LL. D., managing editor. Also abridged Cyclopedia with Atlas of the World. In two volumes, each of about 1,170 pages. Funk & Wagnalls Company, New York and London, 1907.

An enormous amount of work has been entailed in the compilation of such a large dictionary. The many editors and associate editors have been selected from the leading scholars and scientists of the English speaking countries, but are principally American. The vocabulary of about 300,000 words is most complete, notwithstanding that many of the obsolete words, which occur only in the writings of the lesser known older writers, have been omitted; on the other hand a large number of new words have been included, many of which are employed in the arts and sciences while others are used in the handicrafts. Provincialisms, if extensively used, have been included and are indicated as such in the text.

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As regards spelling and pronounciation, priority has been given to the simpler forms, although other recognized forms are given; by a system of initial letters following the words, the preference of each of the leading dictionaries is indicated. The correct pronounciation is indicated by the use of the scientific alphabet of the American Philological Association. This is printed at the bottom of each page so as to be readily accessible for reference.

In giving the definition of words, the usage by leading authors has been used as a criterion and to this end nearly 100,000 volumes have been read by the collaborators. The meaning of the word is explained first by a definite statement and synonyms are also added; in the case of a word having several meanings, they are given in their order of frequency.

The etymology has been abbreviated, as far as possible, by the use of signs and cross references, without, however, impairing the completeness of the derivation. A departure has been made from the usual arrangement by placing the derivation after the definition, as the latter is much more often consulted than the former. Illustrative quotations from the best known writers and also from the leading newspapers have been freely used to indicate the exact shades of meaning, in such cases not merely the author or newspaper is mentioned, but the exact reference to the page as well as the date of publication and the name of the publisher have been given.

The work is very freely illustrated which is a decided advantage.

In addition to the main body of the work there are special articles dealing with spelling reform; rules for compounding words; a very complete atlas; lists of proper names; foreign words and phrases; an article on faulty diction and another on disputed spellings and pronounciations.

It could not be expected that a general dictionary, even as large as this, could quite take the place of a strictly medical one. In the first place a medical dictionary requires revision almost yearly, in order to keep abreast with the introduction of new words, an impossible task with a large general dictionary. In the second place it would be impossible to include in any dictionary all the words used in all the sciences; nevertheless examination of the text shows that a very satisfactory selection of medical terms are given, quite enough for all ordinary purposes, so that a physician has combined in this one volume not only a general dictionary but a very satisfactory medical one as well.

The work is exceedingly well printed and bound and the editors and collaborators deserve a high measure of praise for the eminently satisfactory result of their labors.

The Practical Medicine Series. Volume II. General Surgery, edited by John B. Murphy, A. M., M. D., LL. D., Professor of Surgery in Rush Medical College (in affiliation with the University of Chicago). Series 1907. The Year Book Publishers, Chicago.

This volume presents to the practitioner a resumé of the progress of surgery up to the time of its publication. The early chapters are devoted to the discussion of anesthesia and anesthetics and descriptions and illustrations of new instruments; diseases are then taken up in detail and new methods of treatment are described, together with new operative technic, which is well illustrated. The volume will be found a very handy reference book for the general practitioner as it gathers together in a small space a record of surgical progress to date.

Treatment of the Diseases of Children. By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital, etc. Octavo volume of 597 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, $5.00 net; half morocco, $6.50 net.

It is a genuine pleasure on turning to this text-book of Dr Kerley's on Children's Diseases, to find that one gets away immediately from the stereotyped descriptions, which so frequently stamp the works devoted to this subject.

The author has drawn wholly from his large clinical experience with children and has left the mark of his personal experience and individuality in every chapter.

There have been, perhaps, greater strides in the care and treatment of children within the last decade than in almost any other branch of clinical medicine and the author has sifted all the work that has been done along his line and incorporated, in a single volume, the important results. The chapter devoted to the care of the infant gives particularly valuable details, attention being given to the care of hygiene and clothing, as also does the chapter devoted to feeding. Written essentially for the general practitioner, rather than for the specialist, it is a work which cannot fail to prove of immense value, the sections devoted to treatment being especially valuable and unusually clear. In a volume of such exceptional worth it is difficult to single out individual subjects which deserve specified commendation, but the chapter devoted to gymnatic therapeutics will appeal to a large number of readers. Throughout the text there are incorporated a number of formulas which will prove helpful and where necessary illustrations of the distinctly illustrative type have been introduced to make the text even clearer. A very complete index concludes this volume.

We cannot commend too highly this work by Dr Kerley, and are confident that it will be accorded a first place among the text-books devoted to the subject.

Kirkes' Handbook of Physiology, revised and rewritten by Charles Wilson Greene, A. M., Ph. D., Professor of Physiology and Pharmacology, University of Missouri. Sixth American edition. Five hundred and seven illustrations, including many in colors. William Wood & Co., New York, 1907.

Kirkes' Handbook of Physiology has long been well known and favorably received. This, the sixth American revision, is essentially a revision rather then a re-edition and incorporates many new features not seen in the earlier volumes. The general plan and arrangement of the text remains much as in the earlier editions, a matter of no little importance to one who is at all familiar with the earlier volumes. An entirely new feature, consisting of directions for laboratory work, is introduced at the end of each chapter, which, while not exhaustive, are amply sufficient to illustrate the points brought out in the text. The chapters devoted to the nervous system have been materially done over in this edition and, in our judgment, much improved. The important points of the recent work in this field have been brought out and a large number of illustrations which add much to the clearness of those chapters are finely executed. While not an exhaustive text-book upon the subject of physiology, and not intended in any sense to compete with the more voluminous works upon the subject, this work if kept constantly abreast, as evidenced by the present edition, will always maintain its high standard as a so-called handbook upon physiology.

The Medical Record Visiting List, or Physicians' Diary for 1908. New revised edition. William Wood & Company. New York.

This visiting list contains a journal with a capacity of 60 patients a week, space for obstetric engagements, addresses of patients and cash account. There are also tables giving the approximate equivalents of temperature, weight, capacity, measures, etc., an obstetric calendar and a dose table of drugs in apothecaries and metric measures. There are several other pages of useful information including poisons and their antidotes, hints on the writing of wills, etc.

Acknowledgements

Monthly Bulletin of the Illinois State Board of Health.

Peritoneal Tuberculosis, Parker Syms, M. D.

Trachoma, Its Character and Effects, T. Clark and J. W. Schereschewsky.

Gonorrheal Prostatitis. J. Bayard Clark, M. D.

Pollution of New York Harbor as a Menace to Health, by the Dissemination of Intestinal Diseases Through the Agency of the Common House Fly, Daniel D. Jackson, S. B.

Ohio State Board of Medical Registration and Examination

EXAMINATION PAPERS DECEMBER 10, 11 and 12, 1907

ANATOMY—1. Locate the principal groups of lymphatic glands. 2. What is the mesentery? 3. Describe the tibia. 4. Name the principal muscles of the back. 5. Describe the seventh cranial nerve. 6. Name in order the bones of the carpus. 7. Give a description of the pylorus. 8. How are the muscles united to bone? 9. Describe the shoulder joint. 10. Name five muscles of the back of the leg.

CHEMISTRY—1. Give the formula for sodium sulphate. Show by equation how it is prepared. 2. What are isomeric compounds? Name two. 3. Distinguish between combustion, oxidation and reduction. Illustrate each by an example. 4. What is an anhydrid? Give an example. 5. What is carbolic acid? Name its antidotes. 6. What is the difference between mercurous chlorid and mercuric chlorid? 7. How does CO_2 act as a poison? 8. Compare ozone with oxygen as to (a) occurrence, (b) properties. 9. How would you proceed in a case of attempted suicide where strychnin sulphate had been used? 10. How does hydrogen exist in nature? Give its symbol, valence and atomic weight.

PHYSIOLOGY—1. What is the function of the cerebellum? 2. Describe the sympathetic nervous system and its function. 3. What changes take place in the circulation during sleep? 4. Explain the physiology of the eye. What is meant by accommodation? 5. Describe the blood current, its velocity and pressure. 6. Describe the mechanism of respiration. 7. What physical conditions affect changes in body temperature? 8. Through what channels, and by what forces is the blood, in the general circulation, returned to the heart? 9. What is the composition of the gastric juice, and what is its function? 10. Define secretion and excretion. Give an example of each.

MATERIA MEDICA AND THERAPEUTICS (REGULAR)—1. How does magnesium sulphate act as a purge? 2. Describe the effect upon the blood of the coal-tar preparations, particularly explain the blueing of the skin. 3. Give some therapeutic indications for the use of salol; is there any condition which contra-indicates its use? 4. Write a prescription for an emulsion containing the yolk of one egg and 35% cod-liver oil. 5. What preparations of lobelia are used and in what amounts? What is its special therapeutic indication? 6. Should fluid extracts be prescribed with water? Give your reason. 7. Upon what theory is the therapeutic application of elastic pressure made in the treatment of varicose ulcers? 8. Briefly outline the therapeutic management of diabetes mellitus. 9. Describe the physiologic action of ergot. 10. What have you to say about the following prescription:

℞ Pepsin ....grs. xx
Bismuth subnitrate
Sodium bicarb ....aa grs. x
M. and make into one powder.

Sig. Give after eating.

MATERIA MEDICA AND THERAPEUTICS (HOMEOPATHIC)—1. Define clinical, pathognomonic and pathogenetic symptoms. 2. What are the mental characteristics of ignatia and gelsemium? 3. Give leading characteristics for mag. phos. and natrum phos. 4. Give leading characteristics of three polychrests. 5. Differentiate arsenicum, camphor and veratrum. 6. Give indications for three remedies in tuberculous trouble. 7. Give urinary symptoms of cantharis, terebinth and lycopodium. 8.

Give indications for three remedies in hemorrhage. 9. Differentiate ipecac and tartar emetic in chest lesions. 10. Give indications for leading remedies in shock.

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC)—1. Give the physiologic action of belladonna. 2. Detail the symptoms calling for the exhibition of podophyllum. 3. Under what condition would you give the following soporifics—chloral hydrate, morphin sulphate, passiflora, hyoscyamus? Give dosage. 4. Name five diaphoretics and give indications. 5. What remedy would you administer in a case presenting the following symptoms: great restlessness, pain in front and left side of head and left orbit, sharp stroke of pulse, and bright red and enlarged papilla of the tongue? 6. Give botanical name of black haw, pokeroot, blue flag, wild yam, Indian hemp. 7. What is aloes? How prepared, varieties, therapy? 8. Name three mineral acids which influence the gastro-intestinal tract. When give each? 9. Tell what you know about Secale cornutum. 10. Name five drugs which exert a direct action on the heart, and describe such action.

PRACTICE AND PATHOLOGY—1. What symptoms characterize the ataxic stage of tabes dorsalis? 2. How diagnose arteriosclerosis? 3. What are the usual symptoms of uremia? 4. Diagnose and give treatment for nephritic colic. 5. Define auto-intoxication and name some of the diseases in which intestinal antiseptics are indicated. 6. Give etiology and treatment of bronchial asthma. 7. Make the diagnosis of multiple neuritis. 8. Name some diseases leaving enlargement of the spleen. 9. Give the symptoms and treatment of erysipelas. 10. State the symptoms and prognosis of mitral stenosis.

SURGERY—1. How would you treat a fracture of the neck of the femur in a patient seventy years old? 2. Give diagnosis and treatment of fracture of the patella. 3. Give causes and treatment of ununited fractures. 4. Give diagnosis and surgical treatment of a renal calculus. 5. Indicate treatment for hemorrhoids, both palliative and operative. 6. Describe an operation for the radical treatment of hydrocele. 7. Give some rules to be observed in administering a general anesthetic. 8. Describe volvulus of the mesentery of the small intestine and give treatment. 9. Describe radical treatment for cure of femoral hernia. 10. How treat the stump in appendectomy?

OBSTETRICS—1. Describe briefly the changes which take place in the circulation after birth. 2. Make a differential diagnosis between ectopic pregnancy and suppurative salpingitis. 3. Where should the cord be ligated? How dress the stump? 4. What should be the criteria in determining how long the mother should remain in bed after labor? 5. What have you to say concerning the use of the postpartum douche? 6. What causes produce posterior rotation of the occiput? 7. Give briefly the prognosis and treatment of occipito-posterior positions. 8. What procedure would you adopt to arrest hemorrhage in placenta praevia, the cervix partially dilated? 9. Give the signs and symptoms by which impending eclamptic seizure may be recognized. 10. What course would you advise at term, the conjugate diameter measuring 2½ inches?

DISEASES OF WOMEN—1. Give indications for hysterectomy. 2. Describe two recognized surgical procedures for any uterine displacement. 3. Give some causes of leucorrhea. 4. Give symptoms and treatment of urethral caruncle. 5. Give chief causes of irritability of female bladder.

DISEASES OF CHILDREN—1. Describe infantile paralysis. 2. Make the diagnosis of intussusception. 3. Give the treatment of impetigo contagiosa. 4. Give the treatment of gonorrheal ophthalmia. 5. What is the prognosis of bronchopneumonia; tetanus and chorea?

PHYSICAL DIAGNOSIS—1. How and where is the normal apex beat found, and what diagnostic significance is derived from its displacement? 2. Explain the reduplication of the heart sounds. 3. What diagnostic significance is derived from aortic murmurs? 4. What pathologic conditions are suspected from the presence of bronchial breathing? 5. Describe rales, their varieties and pathologic significance. 6. Give physical signs of the presence of abnormal fluid in the abdomen. 7. How would you determine by physical examination abnormal conditions of the liver? 8. Mention two types of paralysis and their differences from anatomic regions. 9. Explain diagnostic significance of anesthesia. 10. Explain pathologic significance of the presence of albumin in the urine.

Medical News

T. C. Vanpelt has opened an office at Waynesburg.

F. V. Johnson, of Deerfield, is very sick from typhoid fever.

Wm. H. Guiss, of Tiro, is in Oklahoma with a party looking over the land.

Frank Smith and wife have removed to their new home at North Liberty.

Eugene Stroud, of Sandusky, was recently injured while working in his laboratory.

S. E. Findley, of Mansfield, is at home again after spending two weeks in Florida.

U. P. White, of Athens, has gone to Dalhart, Texas, for the purpose of investing in land.

L. F. Cain, of Caldwell, and **D. B. Horton**, of Ava, have gone to Checotah, Oklahoma.

A. T. Woods, of Loyal Oak, expects to spend the winter in the south on account of ill health.

Thomas W. Walker, of Steubenville, sprained his ankle several days ago by slipping on the stairs.

J. V. Hartman, of Findlay, has returned from the East, where he has been taking a post-graduate course.

Charles Hay and wife, of this city, have returned from the East, where they were visiting relatives.

Carlyle Pope has removed his office from the Kingmore Building to his residence at 1950 East 81st Street.

E. P. Carter has removed his office from the Kingmore Building to his residence at 1872 East 97th Street.

W. S. Phillips, of Belle Center, has been elected president of the Northwestern Ohio Medical Association.

J. A. Oliver, of Steubenville, is reported as being in a very critical condition, the result of erysipelas.

C. O. Jaster has recently opened offices at 902 Rose Building, for the treatment of eye, mental and nervous diseases.

F. B. Entrikin has just returned to his home in Findlay after several weeks' visit among the large hospitals of the East.

John S. Archer, of Shadyside, who has been taking a post-graduate course at a medical college in Columbus, is at home again.

F. P. Moore and wife are in San Antonio, Texas, where they expect to spend the winter months, for the benefit of Dr Moore's health.

Huron County Medical Society have elected the following officers: President, A. L. Osborn, Norwalk; First Vice-President, W. E. Gill; Second Vice-President, M. L. Hindley, Monroeville; Secretary and Treasurer, J. A. Sipher Norwalk; Member Board of Censors, S. E. Simmons, Norwalk. Delegate to State Convention, H. R. Dewey, Bellevue, with R. L. Morse, of Norwalk, as alternate.

The forty-fifth regular meeting of the Lake County Medical Society was held Monday, December 2, 1907, in the Assembly room of the Parmly Hotel, Painesville, Ohio. Program: 1. Exhibit of Lake County Pioneer Medical Relics by the Profession. 2. Closing of Nominations and Election of Officers for 1908. 3. Reports of Committees, Preparation for the Annual Banquet and Miscellaneous Business. 4. Reports and Presentation of Cases. 5. "Malnutrition," M. J. Lichty, Cleveland, O. Discussion opened by Drs Sherman and House.

Deaths

H. R. Farrell, a well known physician of East Liverpool, died in November.

Silas A. Boynton, one of Cleveland's best known physicians, died December 2, at the age of 72.

A. C. Green, a former resident of Monroeville, died at his home in Los Angeles, California, early in December.

J. I. Baker, who had practiced medicine in Rock Creek and vicinity for 35 years, died at the age of 81, after an illness of two weeks.

The Cleveland Medical Journal

VOL VII FEBRUARY, 1908 No 2

Studies in Aneurism

HISTORICAL AND CRITICAL

By JAMES G. MUMFORD, M. D., Boston, Mass.

Says the learned Adams*: "It appears to me that at certain periods of ancient times, the standard of professional excellence was such as would not easily be attained at the present day * * * The Father of Medicine held that, to become an eminent physician, it was necessary, not only to be well acquainted with the structure of the human frame, but also to be skilled in logic, astronomy and other sciences * * * His devoted admirer and follower, Galen, was evidently the very *beau ideal* of an accomplished physician; skilled in all the sciences of the day, in logic, mathematics, rhetoric, and the first philosophy; to all these ornamental branches of knowledge he added a minute acquaintance with anatomy and physiology; a practical experience with the phenomena of diseases; a singular perseverance in collecting facts; and an extraordinary ability for generalizing them."

Since the best of our forbears in medicine were such as Adams describes them, it is worth our while occasionally to glance back at what they did, that knowing their struggles and experiences, we may more lucidly and intelligently approach problems of our own day. The men, as well as their problems, go to make up a fascinating subject of study. Many of us have groaned perhaps over these matters, because the light of heaven has been obscured by pompous interpreters, by dull pedants, by dreary translators: but truly we must believe that those ancients were real men—those worth knowing; and that they attacked their problems often in fine, spirited, sane and knightly fashion.

Read before the Cleveland Medical Library Association, December 16, 1907

*Francis Adams; Editor of The Seven Books of Paulus Aegineta; Sydenham Collection, 1844.

We in these days, with our somewhat feeble, formal and spiritless manner of reviving studies in the history of medicine, are wont to dwell overmuch on the *lives* of men, and to make a perfunctory rehearsing of their detailed *endeavors.* But may not the history of an endeavor interest us?—a great endeavor which has engaged our ablest minds through twenty centuries,—a great endeavor which has been made a luminous accomplishment, at last, by men of our own time?

Throughout history the mystery of the circulating blood,—its nature, its course, the character of its components, the artful concealment of its source and forces—has fascinated and baffled philosophers and scientists. To the old writers the heart and blood-vessels seemed the noblest parts of man;—making up a mechanism and a system, constant, perpetual, wondrous, inexplicable, vital. We have been told that hidden, divine forces control this system; almost down to our own time the liquor sanguinis itself was held to contain intangible elements, which writers, groping blindly, were content to describe as "spirits"; and the ebb and flow of the life stream were for thousands of years the theme of speculation, discussion and marvel. If the nature of the blood and its vehicles was obscure to the physiologist, we must understand that to the physician and the surgeon the diseases of the blood and blood-vessels were still more difficult of comprehension, so that we find no one department of the complex problem more troublesome or hotly debated than the subject of *aneurism.*

Galen is the first writer to describe it, and this is his definition: "When an artery is opened the disease that occurs is called aneurism. It happens in consequence of the skin in the neighborhood of a wounded artery cicatrizing, whilst an ulcer remains in the vessel"; and again, "an aneurism is a dilation or relaxation of a venous vessel, or a dispersion of the spirituous matter under the flesh, where it diffuses and distributes itself by jerks*.

Contrast Galen's writing of the second century with that of Roswell Park published this year of 1907: "An aneurism is a tumor communicating with an artery, and containing circulating or coagulated blood, or both." In 1825 Astley Cooper wrote, "An aneurism is a pulsating tumor communicating with the interior of the heart, or of an artery, and containing blood." Galen's statement is interesting and the man was a remarkable man. By the average reader of surgical literature his name is coupled with that of Hippocrates, and the two are pigeon-holed as admirable personages doubtless, but of no immediate interest to us.

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*John E. Erichsen, Translator.

Now Galen lived five hundred years after Hippocrates; in a world differing from that of his famous predecessor as such as the world of Theodore Roosevelt differs from that of Sebastian Cabot. Galen was a man of good birth, careful university training, and rare culture; and fortunately for science, perhaps, he was a Greek, though many of his adult working years were passed in Rome. Galen was a contemporary of Marcus Aurelius, which places him for us therefore in the second century A. D.

The fundamental reason for Galen's great and sustained reputation is his constant employment of demonstration and his insistance upon rational and intelligible evidence. Hippocrates had confined himself to bedside investigation. Galen went beyond that; he developed further his Alexandrian training, and practiced and taught laboratory methods through animal experimentation. He was truly our first great physiologist, and he was a surgeon as well.

Perhaps his most famous discovery, and the one for which he is best known, is that of the true function of the arteries. Previously men believed arteries to contain air, as their name implies. Galen recognized the fact that arteries in the *dead* appear to contain air, but he demonstrated by the double ligature of an artery on a living dog, and subsequent section of the vessel between the ligatures, that the artery is distended with blood. He observed, too, that arterial blood differs from venous blood, and this phenomenon he ascribed to the entrance of some vital element or spirit of the atmosphere through the lungs into the arterial system. So he himself and his successors for centuries, when describing arterial hemorrhage, were wont to speak of an outpouring of blood and *spirits*. More remarkable still, he asserted a fact which even Harvey, fifteen centuries later, did not state,—that there is a terminal communication between veins and arteries; and he used our present word anastomosis.

Here was a man, therefore, qualified properly to discourse upon aneurism; and doubtless his observations would have equalled in value those of eighteenth century Haller if only he might have seen frequent cases of the disease, or have turned his mind vigorously to its study. As it was, he failed to recognize the nature of true aneurism, so that his givings-forth, backed by the influence of his great name, misled surgeons for centuries.

His definitions confuse us, but their upshot seems to be that he recognized what we call false aneurism only—a mass of blood and clots poured out into the tissues, and fed through a rent in a wounded artery. And he seems to apply the term aneurism to a dilated vein also.

Says John Hunter, writing in the eighteenth century, "There is no such thing as a false aneurism"; and our own Matas said truly the other day, "The false traumatic aneurisms are simply circumscribed, diffuse collections of blood, or pulsating hæmatomas." The modern conception of a true aneurism as being a diseased and locally dilated artery, certainly was not clear to Galen. Nor was it clear to him in just what way his kind of aneurism should be treated. He was familiar with the use of the ligature to control hemorrhage;—witness that double ligature of the dog's artery,—but he appears to have contented himself with seeking to cure aneurism through cutting off its blood supply by external pressure

In all our discussions of ancient surgery and the apparent timidity of those surgeons we must remember constantly that they knew not anesthesia, and faced conditions of frequent sepsis. That is a trite saying which I inject here, not so much for the sake of exalting modern accomplishments in comparison, as to express my admiration for the accomplishments of the ancients, with all their disadvantages. We must remember in this connection, however, that although in former times sepsis seems to have followed operations upon human beings, experimental operations upon animals seldom were followed by sepsis,—an observation frequently made in our modern laboratories of surgical research.

We have seen then that Galen did make an important contribution to the knowledge of the nature and functions of blood-vessels, although he added little directly to the study of aneurism.

Roman Antyllus followed Galen;—indeed, for what we know, he may have been Galen's pupil; he lived in the third century, and yet his suggestions and practice resemble those of our own day. He took advantage of Galen's teaching,—that we may control hemorrhage from an artery by tying the artery above the wound, a procedure which seems as obvious to us now as the damming of a river in order to turn aside its lower currents. But Antyllus did not perceive the full significance of Galen's teaching. He tied the artery immediately above the aneurism; then, mistrusting his own judgment, he went further, and after placing a second ligature close below the aneurism, he opened the aneurismal sac, evacuated the clots and allowed the wound to heal by granulation. It is doubtful if Antyllus even appreciated the character of true aneurism. We know of his work through the quotations of Oribasius only, and Oribasius seems to have believed that false aneurism, as we call it, was the only form of aneurism. When we contemplate the limitations under which the ancients worked, this misconception is not surprising. They were rarely permitted by law to dissect, or even to examine, the dead. Their observations upon true aneurism were made after the disease had nearly completed its fatal cycle. Such rare true aneurisms as they saw postmortem, had ruptured, filling the surrounding parts with blood and clots, so that naturally the observers conceived the rupture and the outpouring to be the essential feature, the partial dilatation of the artery to be insignificant or merely coincident. Students of medicine regret the scanty extent of our knowledge of Antyllus. We know inaccurately that he lived in the third century, but we know nothing definite of his life and circumstances. He appeared upon the scene and he left it with small chronicle of his doings, save the general report of his great learning, his incessant activities, his unusual operative ability and his famous treatment of aneurism. After him two great surgeons of antiquity, Aëtius and Paulus, appeared and worked and disappeared, leaving their brief record. The former especially concerns us. With them the story ceases until we come down almost to modern times.

Aëtius is curiously interesting, little as we know of him. He lived in the sixth century, he wrote abundantly, and his brief record of aneurism shows that in the years succeeding Galen some men had come to recognize in a fashion the nature of true aneurism; for Aëtius remarks: "The signs of aneurism are a tumor, without discoloration of the skin or pain, soft to the touch, having a loose spongy feel, and yielding in such a way to the pressure of the fingers that it almost disappears; but returning again, on the fingers being removed, which is very evident in those aneurisms that have risen without a wound." Again, "or if the mouths of the arteries be burst open, the blood and spirits then being gradually poured forth collect under the skin." From this, one concludes that Aëtius recognized at least two forms of aneurism, the true and the false. He thought he had discovered another and peculiarly signficant form of aneurism however,—an aneurism of the neck associated with pregnancy, interesting to us now especially in view of our present knowledge of exophthalmic goiter. He calls this a dilatation of the vessels, most frequently met with in the throat, where it gives rise to a tumor that may commonly happen to women in the child-bearing period. So one sees that two hundred years after Antyllus even, the nature of aneurism was not altogether clear. Men were still discussing its causes; but observe also that they had made a notable advance in its treatment; for mark the brilliant suggestion of Aëtius made in the sixth century,—a suggestion for treatment which John Hunter, all innocent of plagiarism, redevised and simplified twelve hundred years later. Aëtius tells us that in certain specified cases, in aneurism of the limbs for example, we shall tie the artery high above the disease, after which we may safely open and evacuate the tumor. This plan of Aëtius arose directly from the teaching of Galen, for Galen had demonstrated arterial anastomosis. Galen saw that the main arterial trunk is not the sole feeder of blood to the limb, so that even when the main artery is tied, then will the smaller arterial branches dilate, and blood be carried by a round-about course to the tissues demanding it. So far Galen had seen clearly, but he had not grasped the essential corollary,—the bearing which arterial anastomosis has upon the *treatment* of aneurism. Aëtius or his associates dimly perceived the truth. Here are his lucid directions for the cure of aneurism at the bend of the elbow: "In the first place having marked the course of the artery from the armpit to the forearm, we are to make a simple incision, three or four fingers breadth below the armpit along the inside of the arm; and having laid bare the artery, to seize it with a blunt hook and bind it with two ligatures; after which it is to be divided between them and the wound filled with fine frankincense. The swelling at the bend of the arm may then be opened without any fear of hemorrhage. When the coagula have been cleared away, the artery from which the blood is discharged is to be seized with a hook, secured and divided like the former." To be sure, this is not the operation of Hunter, but it approaches Hunter's method more nearly than do other methods of old time.

Curiously enough none of those ancient writers discourse upon sepsis and gangrene so earnestly as do the men of more recent times. Galen, Antyllus and Aëtius urge forcefully the value of various methods of operating and seem to imply their relative safety. The subject of sepsis enters but little into their theme when they deal with wounds. Perhaps we may assume that sepsis was less prevalent among the ancients whose habit of body was clean, fresh and vigorous by law and custom, than it came to be among medieval and early modern men to whom the bath was little known.

With the death of Aëtius the progress of ancient surgery ended. There were other men, of course,—Paul of Egina, and Oribasius of Constantinople, voluminous writers and critics; but they failed to advance knowledge. Yet knowledge of aneurism was already considerable, as we have seen;—that aneurisms are true and false; that anastomosis exists; that compression of the artery will promote healing of the aneurism; that ligature and incision will cure, and that ligature alone will control hemorrhage. With such knowledge solution of the problem rested for centuries.

Through the middle ages also surgical progress languished, though writers tell us much of the accomplishments of the Arabians,—Albucasis, Rhazes and Avicenna; but those Arabians, though active-minded and ingenious, were little other than compilers of former knowledge. They originated no new thing in the understanding or treatment of aneurism. So we come down to the days of the revival of learning,—the fifteenth and sixteenth centuries and to such men as Fernelius, Gorræus and Paré. The works of Galen were somewhat familiar to those surgeons, who had little knowledge of any other ancient writer; and being thus innocent of former things, they seem to have developed a joyous curiosity in delving and inventing for themselves. Johannes Fernelius, the thoughtful German surgeon, wrote in 1542, "An aneurism is the dilatation of an artery full of spirituous blood * * * It is scarcely credible that some imagine that in these affections the vein or artery is ruptured or opened, for if the blood had escaped from the vein or artery it would soon putrify and give rise to a tumor of a different kind." That is the description of a true aneurism and is followed by a curious note of disbelief in Galen's statements. Fernelius wrote after the introduction of printing into Europe, in a time of gay light-heartedness among the nations; but printing had not yet diffused knowledge. One wonders betimes what became of the great Latin folios turned out from the early presses, and to what public they were brought. There was Fernelius denying the existence of what we call false aneurism; but listen to the ingenius Gorræus, writing twenty years after Fernelius,—writing as though Fernelius were to him a name unknown. Thus Gorræus: "An aneurism is a tumor, soft to the touch, yielding to the pressure of the fingers and occasioned by blood or spirits poured out from an artery or vein; * * * the vessels being distended, give way; or from the vessel being divided with the superficial skin, whether accidentally or by the unskillfulness of a surgeon in bloodletting." Gorræus goes on to remark that aneurisms can be cured with great difficulty only, but he does not tell us how.

The great Ambroise Paré was a contemporary of these men, and Paré too had his notions about aneurism. Curiously enough, and unlike his usual original and clear-thinking self, he writes with little personal knowledge of the disease, so that one finds his statements on the subject to contain a curious medley of other men's hypotheses. Yet Paré is a man we should know. If one were to ask the average reader of medical literature why Paré is famous, he would be told,—because Paré invented the ligature. But Paré did no such thing. Have we not seen Galen and others tying arteries? They tied them in continuity, however. Paré introduced the distal ligature of arteries in amputation stumps. We all recall the painting of Paré on the battle-field, waving aside the zealous assistant who offers him the iron, red hot from the furnace; waving him aside, and holding up the famous ligature.

We think of Paré as the greatest clinical surgeon in history; the first of an illustrious surgical line. The son of a nobleman's servant, he was born in 1510; into his father's humble world. But the boy showed great qualities from the start. He was clear-seeing; nobly ambitious; straight-thinking; tireless. He despised pedants and meaningless authority, though he grew to suffer fools gladly. Yet his respect for just authority was constant, and his human sympathy was instant and boundless. Apprenticed early to a barber-surgeon—one of that pathetic lower order of the medical profession as it then was,—he served for years in the famous Hôtel Dieu, that old Paris hospital, and was a pupil of Jacobus Sylvius. Then, as a licensed barber-surgeon, he joined the army, and with the army, or in civil life, he practiced for more than fifty years. Almost at once he perceived the barbarous futility of the customary hot oil applications to fresh wounds; and partly by chance, but guided by sound reasoning, he substituted a simplified treatment,—soothing ointments, bandaging and rest;—a revolution in surgery; accepted at first by the surgical world and then forgotten, to be revived from time to time by such men as Wiseman, Petit, Le Dran and the great Larrey; but empirically, until at length our own generation has learned the truth and justness of Paré's teaching. His great discovery of the uses of the ligature in amputations was made in one of his campaigns. Listen to the passage from his famous *Journeys in Divers Places:* "Here I confess freely and with deep regret that formerly I practiced not this method but another. Remember, I had seen it done by those to whom these operations were entrusted. So soon as the limb was removed, they would use many cauteries, both actual and potential, to stop the flow of blood, a thing very horrible and cruel in the mere telling. * * * And truly of six thus cruelly treated scarce two ever escaped, and even these were long ill, and the wounds thus burned were slow to heal, because the burning caused such vehement pains that they fell into fever, convulsions, and other mortal accidents; in most of them moreover, when the scar fell off, there came fresh bleeding, which must again be staunched with the cauteries, which, thus repeated, consumed a great quantity of flesh and other nervous parts. By which loss the bones remained long afterward bare and exposed, so that for many, healing was impossible; and they had an ulcer there to the end of their lives, which prevented them from having an artificial limb. Therefore I counsel the young surgeon to leave such cruelty and inhumanity, and follow my method of practice, which it pleased God to teach me, without I had ever seen it done in any case, no, nor read of it."

Such a man should have given us some new light on aneurism; but he does not appear to have thought deeply on the matter. Yet his writings on the subject have their peculiar interest, and their own robust flavor. He observes: "An aneurism is a soft, compressible tumor, occasioned by the blood and spirits being effused under the skin." "They may occur in any part of the body, but principally in the throats of women who have difficult labors."

Paré tells us that we cannot cure large aneurisms of the armpit or groin, for on cutting into them so large a quantity of the blood and vital spirit escapes that the patient dies. Here is his delightful account of a case: "This I have sometimes seen, and lately in a priest of St. André des Arts, by name Jean Mallet, living in the house of Monsieur de Thou, first president. This priest had an aneurism, about the size of a walnut, upon the shoulder-joint, and I advised him, as he valued his life, not to have it opened; but on the contrary to use the ointment of balo, and compresses dipped in the juice of mulberries and house-leeks mixed with fresh cheese and other cooling and astringent things, and to apply a plaster to prevent its rupture, with a thin plate of lead, and to wear short sleeves, so that his pourpoint might serve as a ligature to compress the tumor with. Also to avoid everything that might render the blood more liquid, and even to abstain from singing with too loud a voice at St. André, as he was accustomed to do. He followed my advice for a whole year; but, notwithstanding this, the tumor increasing in size, he went to a barber, who, thinking that his aneurism was only a species of abscess, applied a caustic over night in order to open it. On the following morning, the opening was made, and a large quantity of blood escaped; at the sight of which, being greatly alarmed, he cried to the president's wife to send for me in order to staunch it, telling her at the same time that I had advised him not to have it opened; but before I could reach him, he had expired. I, therefore, would advise the young surgeon not to open aneurisms, provided they be not very small, and situated in parts that are not very important; in which case he may divide the skin above them, and, separating the artery, pass a seton-needle armed with a strong thread under it, and allow the ligature to fall of itself. Nature will then generate flesh, which will block up the artery."

All this brings us no nearer to an understanding of true aneurism. The debate went on, and we come upon the famous English surgeon Wiseman, of the time of Charles II, quaintly writing in 1676: "An aneurism is an ecchymosis; * * * authors have supposed the blood to have burst its passage through the first coat (of an artery), and dilated the second, thereby raising the tumor * * * This I myself was taught, and some while believed, but * * * now I am apt to believe there is no such thing * * * but that it takes place from the blood bursting quite through the artery into the interstices of the muscles." Now, Wiseman is a writer full of curious saws and merry anecdotes, not always told to the credit of his colleagues or of mankind in general. But he himself helped not at all in solving the aneurism problem. Compresses and foolish applications were his stock-in-trade; and he relates a tale of an aneurism punctured, drained and packed by a fellow surgeon who healed it eventually by such means. Yet nearly a hundred years before Wiseman, the Paris surgeon Guillemeau gave out this pregnant saying: "With regard to the treatment, the simple ligature of the artery (well above the disease) is of service, more especially if the aneurism be somewhat large."

Wiseman recognized especially a peculiar form of traumatic false aneurism, appreciation of which runs back beyond Galen's time;—false aneurism at the bend of the elbow, due to careless opening of the brachial artery, during the little operation of venesection. The question of treatment for such false aneurisms continually had exercised ingenious men, but note this:—none of them recorded his recognition of aneurismal varix; we hear them tell of brachial false aneurism only, until we come to the elder of the great English Hunters in the eighteenth century.

One may fancy, however, that some understanding of aneurism was developing during the years of the revival of science. More and more, through the sixteenth, seventeenth and eighteenth centuries, faithful and talented men were devoting their lives to investigations of biologic problems,—some few men to the problems of surgery, many to those of physiology and anatomy. We look in vain however to such scientists as Vesalius, Malpighi and Harvey for any authoritative givings-forth on the great question of aneurism;—especially to Harvey do we look, but he was otherwise employed. Lancisi, indeed, the great Roman clinician of the early eighteenth century, wrote an elaborate and searching treatise on aneurism, but his especial claim to aneurismal fame seems to lie in his friendship for the much-talked-of Anel of Turin, whose operation for aneurism is still quoted in our books. Lancisi founded a great public clinic and did more than any other of his day to forward the cause of bedside teaching—unless we except Boerhaave of Leyden. So students and surgeons flocked to Rome; and the genius of the eminent man, there, inspired their later labors, which bore fruit in fields untilled by the master himself. Lancisi was the Billroth, the Paget, the Bigelow of his day.

Lancisi's friend Anel was a disputatious, bumptious, assertive person, given to self-praise, as, alas! were many of his professional brethren in those Philistine days; but he won the regard of Lancisi; though the latter without a sigh saw him depart from Rome. Here is a letter from the great Italian to a correspondent in France:

"Rome, May 22, 1710, Sir,—This letter will be delivered to you by M. Dominique Anel, a Frenchman by birth. This traveler has shown, during his stay at Rome, that he is very learned in anatomy and surgery, and most skillful in operations; and that the dexterity of his hands is uncomparable, by the facility with which he tied the artery in the arm of a poor friar, who was on the point of death in consequence of a true aneurism, which was every moment ready to burst; this I myself saw. The friar is now cured, and enjoys perfect health. I was surprised to find that the cicatrix was of such small extent, so that it is scarcely perceptible, and does not, in the least, interfere with the movement of the arm. You will favour me much by receiving this skillful person amongst the number of your friends; and by receiving him well, as it pleases me to see that those who are endowed with great virtues and possess superior talents, are esteemed by those who are as talented as yourself. Knowing you as well as I do, it appears useless for me to inspire you with such sentiments, as I am aware that you do everything in your power to favour those who excel in science and art; and that, consequently, you will not refuse your esteem to M. Anel. Should he give you a copy of a book that he has written and printed at Amsterdam, you will send it to me, by the first opportunity, with one of your dissertations. I await them with impatience. In the meanwhile, farewell. I am Sir, yours, etc., Lancisi."

After a preface of much self-gratulation Anel tells the story of his famous operation,—an operation which seems to have been suggested to him by inspiration, rather than by investigation and reason: "It was on the 30th of January, 1710, that I performed this operation on the friar in the presence of the above-mentioned gentlemen, who were all of my opinion, except Mr. N. N., who, when he saw that I had prepared the necessary dressings and instruments, asked me with an appearance of vexation if I had absolutely determined on performing the operation. I begged of him then to have a little patience, to examine the patient again with attention, and to recollect that we were there assembled to save the life of a man who was in great danger of losing it very shortly, unless we afforded him the best assistance of our art. I begged of him to second our good intentions without prejudice or jealousy; but seeing that he made more noise and became less tractable, I desired him, once for all, not to prevent me from doing what he either would not do, or did not know how to do himself. This did not stop him, he did everything in his power to disconcert us and to frighten the patient; finally, he left us, threatening the friars never to enter their convent again.

"This occurrence, which might have caused the patient to lose courage, as it took place in his presence, only served to redouble it, for he gave me his arm with much firmness, saying to my opponent as he was going away, 'May God guide you.'

"Having made myself master of the blood by means of a tourniquet, I made an incision in the integuments, without touching, in any way, the aneurismal sac; I then sought for the artery, which I found situated below the nerve, which is not common. I took every precaution in separating it from this, and having lifted it upon a hook I ligatured it *as near to the tumor as possible.* The artery having been tied, I loosened the tourniquet; when a small muscular branch, which I had divided in dissecting the vessel, bled; and compelled me immediately to tighten the tourniquet and to tie the artery again a little higher up. The tourniquet being loosened I saw no more bleeding, nor any pulsation in the tumor. I then applied the proper dressings and a bandage."

He tied the artery close above the aneurism, as others had done before him. He had no thought for the laborious studies, the painstaking research, the ingenious reasoning and the sound conclusions which distinguished the great subsequent achievement of John Hunter, with which the so-called *operation of Anel* has been compared.

During all those years in which surgeons were experimenting with various operations upon aneurism of the extremities, they had discovered the existence of internal aneurism also,—aneurism of the heart, the aorta and other large vessels. Many observers claimed that they had cured such aneurisms. Lancisi himself discourses extensively upon this topic, and relates the interesting case of "the Marquis Litta of Mediolana, a studious young man, of melancholic temperament, who suffered from great pulsation in the cæliac artery and in the lower part of the aorta, with breathlessness and oppression about the heart. He was treated with emollients, mixed with oil of almonds, fomentations, soft-water baths, diluents and asses milk, by which means the tumor disappeared entirely, and the patient lived afterwards for sixteen years." Lancisi tells of many other cases, quoting especially the famous cure by Severinus of Charles IX, who suffered from aneurism and was recovered completely by measures directed towards diminishing the mass of the circulating fluids; by bloodlettings and mild solvents, together with pleasant diluents, such as decoctions of borage, of wild lettuce and the like; with *nitrum stibiatum;* and at the same time a strict diet, the cutting off of eating and the prescribing of extremely small amounts of fluids. Says Lancisi,—"It will be sufficient for the surgeon to direct his efforts to prevent the blood from becoming too abundant. * * * Nor should we despise vulnerary decoctions, which may be ordered for several days after the venesection, in order that the vessels and fibres may be strengthened."

Surgeons of that time were beginning also to recognize constitutional disease as a cause of aneurism, and to ascribe dilatation of the arteries to syphilis. Guattani was a distinguished surgeon of Rome and a successor of Lancisi. Writing in 1772, he describes a Roman grave digger named Andreas Boturri, twenty-five years of age, who came under his care. Boturri was of a moderately sanguine temperament, of a slender habit of body, was marked by several syphilitic scars, and was the victim of a popliteal aneurism. Guattani cured him by the operation of Antyllus. The Scotch surgeon Adolphus Murray recounts another case of Guattani's, which had a less fortunate outcome. The story is that of a groom, "who having received many wounds in the warfare of Venus" suffered from a true aneurism, which appeared near Poupart's ligament. The surgeon thought best to treat the disease by compression, but the warrior groom became restless, and the tumor increased, when the surgeon boldly undertook an operation, but the patient, being seized with gangrene, died on the third day.

The literature of aneurism* abounds in such anecdotes, grave and humorous, but perhaps one of the most interesting, in view of recent methods of treatment, is that of Morand, the well known French surgeon, who published it in the Memoirs of the Royal Academy of Surgery in 1753. Morand recognized the value of the ligature tied above the aneurism, and remarks that common sense has suggested this means; "it was practiced long before the discovery of the circulation of the blood; Hippocrates, Galen and Avicenna mentioning it." But observe especially Morand's description of Brossard's method. Brossard was a surgeon of La Chatre, in Berry, who in 1750 proposed an interesting method of closing the arterial openings within the sac of the aneurism itself, thus obviating the well known dangers of ligature. Morand called Brossard in consultation to treat a case of which he tells the following story: "An officer in the service of the Prince of Conty was sent to me by H. S. H. to be treated for an aneurism of the right arm * * * The tumor was nearly as large as two fists. * * * After having blooded the patient twice, and kept him upon a strict diet for a few days, I performed the operation on the last day of the year, in the presence of M. de la Martinière and a numerous assembly of surgeons. Having applied a tourniquet I laid open the aneurismal tumor by a large incision. I then removed the clots and the fluid blood contained in the sac and exposed the artery * * * the vessel was found to have been dilated. After having observed the opening in the artery M. Brossard laid his remedy against the vessel and begged of me to apply over this a proper bandage." This case seems to have been one of false aneurism due to a sword thrust through the brachial artery, but the method of sealing the open artery was thought to be applicable to other forms of aneurism. The remedy of Brossard was the fungus agaric, which grows especially upon old oak stumps. The surgeon prepared this material by beating it into a sort of foil. He then laid the foil or leaf over the open artery, to which the agaric clung tenaciously, sealing the vessel. Packing and a bandage completed the dressing, and Morand claims distinct success from its use.

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*John E. Erichsen, Observations on Aneurism, selected from the works of the principal writers on that disease; London, printed for the Sydenham Society, 1844.

Interesting as is Brossard's method of closing an open or wounded artery,—the operation of arterial section by Lambert, an Englishman, undertaken eleven years later, in 1761, is still more striking: Lambert was a surgeon of New Castle, and a correspondent of William Hunter; his lively description presented such stimulating reading that his letter relating the following experience was published in London, and was widely circulated.

Lambert wrote to Hunter: "I recollected all that I had seen or read of the effects of styptics, of pressure, and of ligature in the cure of hemorrhage. I considered the coats and motions of arteries, and compared their wounds with the wounds of veins and other parts. * * * And I considered in particular how the union of divided parts was brought about in the operation of the harelip and in horses' necks that are bled by farriers. Upon the whole I was in hopes that a *suture* of the wound in the artery might be successful; and if so, it would certainly be preferable to tying up the trunk of the vessel. * * * To Mr. Hallowell I recommended the method I have hinted. He put it in execution June 15, 1759. Everything was done in the usual method till the artery was laid bare and its wound discovered; and the tourniquet being now slackened, the gush of blood *per saltum* showed there was no deception. * * * Then a small steel pin, rather more than a quarter of an inch long, was passed through the two lips of the wound in the artery, and secured by twisting a thread around it, as in the harelip. This was found to stop the bleeding, upon which the arm was bound up and the patient put to bed: * * * the pin came away with the dressings on the fourteenth day; and on the twenty-third day every part was healed." On July 19, five weeks after the operation, Hallowell's patient was discharged from the hospital, perfectly well, and with a pulse in the affected arm nearly as strong as in the other.

I protest that this account by Lambert is of supreme interest today. It is the first record I have found which describes, or even suggests, the suture of a blood vessel, and one marvels that the immediate success made so little subsequent commotion. The surgeon took up all coats of the wounded vessel which we have learned to be the proper method, so that the immediate union of intima to intima while the vessel wall was supported on the pin is not surprising. Fortunately the wound healed *per primam*. It may be that fear of sepsis and secondary hemorrhage deterred other surgeons from following Lambert's example.

[Concluded in March Issue.]

The Medical Code of Hammurabi, King of Babylon

By H. E. HANDERSON.

In the winter of 1901-2 a French archeological expedition under the direction of M. de Morgan discovered, on the site of the acropolis of ancient Susa, a shaft or monument of black diorite, nearly eight feet high, upon which was engraved in the cuneiform characters a code of laws published by king Hammurabi of Babylon.

This monarch (known also as Khammurabi, Khammuragas) was a king well known to Assyriologists, and assigned by them, with some diversity of opinion, to various dynasties and dates of antiquity. Thus Dr Harper, of the University of Chicago, makes him the sixth king of the first dynasty of Babylon, and fixes his date at 2250 B. C., while Rawlinson calls him the first king of the fifth or Arabian dynasty, and assigns to his reign the period 1546-1520 B. C.

Without seriously perplexing ourselves with the ambiguities of early Assyrian chronology, it is sufficient for our present purpose to call attention to the fact that even the date assigned by Wilkinson carries us back to the age of the famous Papyrus Ebers, heretofore regarded as the earliest authentic monument of medical history, and thus places the code of Hammurabi upon at least a chronological level with that interesting document. It must also be borne in mind that a code of laws presupposes the existence of a community with social relations sufficiently complex and extensive, and of sufficient duration, to warrant the promulgation of general laws for its guidance and government.

From these considerations it admits of no reasonable doubt that the legal code of Hammurabi may be referred to the earlier half of the second millenium B. C.

Hammurabi himself is described upon the monuments as an eminent warrior and statesman, a famous builder and restorer of temples, and a wise and good ruler, who devoted much attention and expense to the irrigation and cultivation of the waste places of his kingdom.

His legal code was published, text, translation, vocabulary, index and notes, by Robert Francis Harper, Ph. D., of the University of Chicago, in 1904, and it is from this work that the following sections are taken. The entire code is full of interest to students of early legislation, but I purpose to confine myself at this time merely to an exposition of its medico-legal features.

The sections relating to medical subjects are as follows:

SEC 206—If a man strike another man in a quarrel and wound him, he shall swear "I struck him without intent," and he shall be responsible for the physician.

SEC. 206—If a man strike another man in a quarrel and wound him, make a severe wound upon a man) with a bronze lancet, and save the man's life; or if he open an abscess (in the eye) of a man with a bronze lancet and save the man's eye, he shall receive ten shekels of silver (for his fee).

SEC. 216—If he (the patient) be a freeman, he shall receive five shekels.

SEC. 217—If he be a man's slave, the owner of the slave shall give two shekels of silver to the physician.

SEC. 218—If a physician operate on a man for a severe wound with a bronze lancet and cause the man's death; or open an abscess (in the eye) of a man with a bronze lancet and destroy the man's eye, they shall cut off his fingers.

SEC. 219—If a physician operate on the slave of a freeman for a severe wound, with a bronze lancet, and cause his death, he shall restore a slave of equal value.

SEC. 220—If he open an abscess (in his eye) with a bronze lancet, and destroy his eye, he shall pay silver to the extent of one-half his value.

SEC. 221—If a physician set a broken bone for a man, or cure his diseased bowels, the patient shall give five shekels of silver to the physician.

SEC. 222—If he be a freeman, he shall give three shekels of silver.

SEC. 223—If it be a man's slave, the owner of the slave shall give two shekels of silver to the physician.

SEC. 224—If a veterinary physician operate on an ox or an ass for a severe wound and save its life, the owner of the ox or ass shall give to the physician, as his fee, one-sixth of a shekel of silver.

SEC. 225—If he operate on an ox or an ass for a severe wound and cause its death, he shall give to the owner of the ox or ass one-fourth its value.

It is apparent from the foregoing extracts that, even at this very early period, there existed in Babylon a class of physicians, and even medical specialists, who possessed an assured position and the legal right to certain not inconsiderable fees, graded in accordance with the social position of the patient. This is in flat contradiction to the statement of Herodotus, who, writing about 444 B. C., says:

"They (the Babylonians) carry their sick into the market-place; for they make no use of physicians. And the passers-by converse with the sick man about his disease, telling him whether they have ever suffered, or have seen another suffering, from a similar disorder. And they advise with the patient and tell him by what means they themselves had recovered, or had seen others recover, from a like disease. For it is not considered humane to pass by a sick man in silence, without inquiring what disease he is suffering from." (I, c. 197.)

Now it does not seem credible that a system of medical practice, so definite as that indicated in the foregoing code, should have degenerated with advancing civilization into a mere gratuitous and accidental exchange of medical gossip, worthy the reception hall of a metropolitan dispensary, and doubtless the "Father of History," in the present instance, was deceived by the report of some mendacious traveler, whose loquacity outran his veracity.

The code, as presented to us in the translation of Dr Harper, is preceded by a prologue indicating the authority by whom it was published, and the temporal and eternal rewards promised to those who faithfully obey its precepts. In like manner it is followed by an epilogue, which denounces fearful curses and punishments upon the careless and disobedient. As an example of the style of the Oriental anathema, I quote the following:

"May Nin-kar-ra-ak, the daughter of Anu, who commands favors for me in Ekur, cause to come upon his members, until it overcomes his life, a grievous malady, an evil disease, a dangerous sore which cannot be cured, which the physician cannot diagnose, which he cannot allay with bandages, and which, like the bite of death, cannot be removed! May he lament the loss of his vigor!"

Now to the untutored Occidental reader the very exuberance of Oriental imagery and the refinement of anathematization displayed in this formidable curse seem rather to deaden its force and to diffuse its violence.

Divested, however, of its superfluities, and reduced, as it were, to its lowest terms, this elaborate anathema sounds suspiciously like the more familiar, concise and business-like curse of Shakesperean diction—"Pox on him,"—a remark which, however, must not be rashly tortured into an argument for the existence of syphilis in the halcyon days of the venerable and venerated Hammurabi.

The object of the present article is simply to present to the profession this new documentary evidence of the existence and activity of their medical predecessors in the ancient kingdom of Babylon, and in the early part of the second millenium B. C.

1924 East 66th Street

The Value of Blood Examination in Surgery

By F. E. BUNTS, M. D., Cleveland, O.

While the study of the pathologic changes in the blood in the varied forms of disease has long been of great medical interest and value, it is only in recent years that it has attracted unusual attention from the surgeon.

The search for microörganisms of disease in the blood was rewarded by the discovery of many of them, undoubted causes of disease, but the practical usefulness of their detection was confined largely to the realms of pure medicine.

In more recent years the practical values have been derived chiefly, though not entirely, from the study of morphologic constituents of the blood and their varying characteristics in different diseased conditions, and it is to some of these changed conditions that I wish to refer, hoping to deduce from their consideration a fair estimate of their relative value and application.

I shall, therefore, take for the basis of this discussion:

1. The Hemoglobin.
2. Coagulability of the Blood.
3. Iodophilia.
4. The Leukocyte Count.
5. The Differential Count.

Not that there are not other points of great interest and prospective value, but these, so far as my own clinical experience goes, have proved the most practical and useful.

Hemoglobin: It may be said at the outset that emergencies may arise in which operations must be performed regardless of the condition of the blood or the amount of hemoglobin present,

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Read before the Clinical and Pathological Section of the Academy of Medicine of Cleveland, January 3, 1908 and yet there must be a point where relative safety ceases and danger is present. Ether and chloroform have a decided effect upon the hemoglobin, and as the hemoglobin approaches the danger limit greater and greater care in the administration of the anesthetic must be used; the amount given should be the minimum consistent with the necessities of the operation, and the addition of oxygen from time to time during the anesthesia would probably prove of benefit. Just what the danger limit is cannot be accurately stated, but 50% might be taken as a working basis, and percentages below this regarded as more and more serious, general anesthetics to be given only in urgent cases. When the percentage reaches as low as 40%, Keen and others advise the use of local anesthesia when possible, and if the hemoglobin fall to 30%, would only consent to give a general anesthetic "under the stress of an imperious necessity." It must not be thought, however, that operations may not be successfully performed under general anesthesia when the percentage of hemoglobin has fallen much below 30%, numerous successful cases having been reported with hemoglobin ranging from 30% to 15%. The probable length of time necessary for the operation should also be taken into account in estimating the outcome, for the longer the duration of the anesthetic the greater will be its effect upon the hemoglobin and consequent lowering of its percentage and increasing the operative risk.

We may state, then, as to the value of the hemoglobin examination, that it is a valuable aid in our prognosis, that it gives us a clue as to the safety of administering a general anesthetic, but that in emergencies it must not be considered an absolute bar to operation however low its percentage may be.

Coagulability: Under ordinary circumstances the question of the length of time that blood will take to coagulate scarcely needs to be considered before subjecting the patient to operation, for while the normal time is in the neighborhood of four minutes, there is a wide variation, so that patients have been successfully operated upon when the coagulation time was as great as 14 minutes.

It is in cases of profound and chronic jaundice that its significance becomes most pronounced, and, inasmuch as most of the deaths from persistent oozing of blood in patients not hemophiliacs have been in jaundice cases, whether from malignant disease or obstruction of the bile ducts, it is in this class of cases that the coagulation time should be taken, and if it be delayed beyond 10 minutes the operation should only be undertaken under the stress of urgent necessity. It seems to me, too, that the duration of the jaundice is of great importance, for the more severe and chronic its character the more probable is it that uncontrollable oozing will follow an operation.

Inasmuch, however, as many of these cases must be operated upon at all hazards, the coagulation test must be regarded of chief value as a guide to prognosis and a check against non-imperative operations.

Iodophilia: My experience with the iodophilic reaction has been relatively slight, but so far as it has extended it has rather tended to confirm the statement that it has a distinct prognostic and a moderate diagnostic value. In not all cases of suppuration is glycogen to be found in the leukocytes, but its presence as determined by the iodin stain is strongly corroborative of the suspicion that suppuration is present. One of the most interesting features of this reaction is that it is uniformly absent in cases of unmixed tuberculous infection, even when it has progressed to the stage of formation of large tuberculous abscesses, so that its discovery would indicate positively either that we had to do with a mixed tuberculous and pyogenic infection or else that it was a non-tuberculous abscess. This might be taken into consideration in the diagnosis of tuberculous peritonitis, tuberculous salpingitis or appendicitis. W. W. Keen reports a case of "obscure tuberculous spinal caries followed by death from tuberculous ulceration in the small intestine causing severe and repeated hemorrhages, in which the absence of iodophilia and the low leukocytosis were very marked proof of the tuberculous nature of the disease, and aided very much in the diagnosis. The symptoms were very analogous to an appendicitis and there was a continuous temperature of 102° to 103° and occasionally 104°, but there was no iodophilia and the leukocytosis was only 3,400 to 7,800. A careful bacteriologic examination of the contents of the tissues after operation showed an absolutely pure tuberculous infection."

Were the iodophilic reaction constant in suppurative cases, it would, indeed, be one of the most valuable of blood examinations, but even knowing its occasional absence, there will always be obscure cases in which its discovery will help very materially in arriving at a correct diagnosis, and its disappearance after operations upon suppurative cases, in which it has been present, will point to the successful evacuation and drainage of the suppurative focus, while its persistence or recurrence would suggest an incomplete operation or a new accumulation of pus.

Leukocytosis: This has so long held an important position from a surgical standpoint, in blood examinations, that it seems almost superfluous to refer to it, and yet the additional evidence of each clinical observer must be of some value, as adding some weight to the vast mass of observations and deductions which have already been made.

Pathologic leukocytosis may be regarded as an index of the resistance of a body to disease, particularly if the disease be of an inflammatory type. The conception, at one time so prevalent, that it was an indication of suppuration, has been amply disproved, so that it needs no discussion. While the normal leukocytosis varies from 5,000 to 10,000, I have seen a leukocytosis of 28,000 in a cholecystitis without suppuration, and not infrequently appendical inflammation, the so-called catarrhal form without pus, may show a white blood count of more than 20,000. This, I think, is particularly true in children. Still we cannot, with all the clinical evidence which every surgeon must have at hand, avoid the feeling that a progressively increasing leukocytosis means not only an increasing violence of the inflammatory reaction but of its probable eventuation in pus formation. Some infections may be so overpowering that the reaction as evidenced by increased leukocytosis never occurs, and in such a case one might be led astray in this conception of the gravity of the situation were he to place more than its true significance upon the absence of this common sign of infection. It is only one of a group of signs. Redness, heat, pain, swelling, fluctuation, leukocytosis, are all signs of suppuration, but the absence of any one of them does not by any means indicate that suppuration is not present. However much value we may place upon the leukocyte count as an index of inflammation and suppuration, I believe that it is in certain differential diagnoses that we find it of greatest value. Thus its presence decides emphatically against an unmixed tuberculous infection, and in doubtful cases, in which it is difficult to decide whether we are dealing with an early case of typhoid or of appendicitis, the presence of any material increase in the leukocytes must decide the case as not being one of typhoid. In cases of intestinal perforation in typhoid fever one might expect an increased leukocytosis, and, indeed, if the patient survive, this will usually occur, but when it does it is evidence of an attempt at resistance to a new and probably general peritoneal infection, and is too late and uncertain to be of value from a diagnostic point with view to operation.

While acute abscess formation is practically always accompanied by an increase in the white blood cells, yet, when an abscess becomes well walled off and further invasion ceases and the pus tends to become sterile, the leukocyte count may return to the normal.

In neuralgic or painful abdominal or pelvic conditions, such as may be referred, for instance, to the stomach, gall-bladder, kidney, ovaries, etc., unaccompanied by inflammation, leukocytosis is absent and becomes an important diagnostic factor. Leukocytosis is present in many conditions, such as fractures, pneumonia, cancer or malignant growths, burns, and appears, too, as a physiologic condition during certain stages of digestion. So that in considering this phenomenon we must do so with a broad conception of its various possibilities and regard it not as pathognomonic of anything but rather as a very valuable aid, sometimes, in diagnosis and prognosis.

Differential count of polymorphonuclears: Intimately associated with the leukocyte count, in fact inseparable from it if we are to approximate as closely as possible to its true significance, is the estimation of the number of polymorphonuclear cells present, for if the leukocyte count be higher while the polymorphonuclear count is relatively low, we have what might be termed a false leukocytosis, one such as we may get, for instance, in leukemia. In order to establish a fixed basis for the determination of the increase or decrease in polymorphonuclear cells, it is necessary, if possible, to determine their percentage in normal blood. As this percentage varies according to various observers from 68% to 80%, Gibbons has suggested that with a possible normal leukocytosis of 10,000, we accept 75% as the normal for the polymorphonuclears. He considers the value of the polymorphonuclear count not dependent upon its actual number but rather upon the relative disproportion of the polymorphonuclear percentage to the total leukocytosis. This feature had been previously emphasized by F. E. Soudern in an article published in 1905.

For a standard of comparison, based upon fairly coinciding clinical observations, Gibbons suggests an increase of 1% in the polymorphonuclear count for every 1,000 increase in the leukocyte count, thus 10,000 leukocytes representing normally 75% polymorphonuclear cells; 11,000 would be represented by 76%; 12,000, by 77%, etc.

Any marked excess in the percentage of polymorphonuclear cells would seem to indicate an increased severity of inflammatory process and make the prognosis more grave. Thus a leukocyte count of 14,000, with a polymorphonuclear percentage of 85 or more, would be of grave significance, while a lowered percentage would either have no determined significance, or possibly speak for a more successful vital resistance and, therefore, a more favorable outcome.

During the past year I have carried out in a considerable number of cases the differential blood count, and have based my comparisons of the leukocytes and polymorphonuclears upon the suggested standard of Gibbons, and I wish to agree with his conclusions so far as the grave significance of a marked increase in the polymorphonuclear percentage. It has seemed to me that a marked decrease of the percentage was of almost equally grave significance; thus, in a case of gangrenous appendix with general appendicitis, which resulted fatally, the leukocyte count was 18,600, polymorphonuclear 75%.

I believe that the differential count is destined to replace the simple leukocyte count, and that accumulating observations will place the significance to be ascribed to it upon a much more positive and scientific basis than has yet been the case in the leukocyte count.

In conclusion, I wish to say that the examination of the blood has proved of very great scientific and clinical value to surgery, and, while limited in its sphere and often disappointing, we have reason to believe that persistence in the study will enlarge its field of application and throw much light upon problems that still remain obscure.

Report of a Case of Vaginal Cesarean Section for Acute Cardiac Dilatation and Pulmonary Edema

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About a year ago in a paper read before the Academy on "Heart Disease as a Complication of Pregnancy and Labor"* I made the following statement: "When confronted with the question of what advice to give to one, with heart disease, who wishes to have children, we must not base our decision alone on whether

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Read before the Clinical and Pathological Section of the Academy of Medicine of Cleveland, January 3, 1908

*Cleveland Medical Journal, March, 1906.

we think she will safely pass through the dangers incident to child-birth, of which we can not assure her, but also on the probable future condition of her heart and health as a result of the extra strain. If we do this we will advise against pregnancy in all such cases."

This opinion was expressed after reporting several cases of labor complicated with heart disease. One of these was a case of abortion in a patient to whom I gave such advice because I considered her heart should not be made to stand the strain of pregnancy and labor, but about two and a half years later I was informed that she was pregnant and expected to be confined about January 1, 1908. This information was a cause of much anxiety on my part, which increased with the advance of pregnancy, and that it was well founded the future history of the case will show.

The patient's general condition for the past two years was fair, except for an occasional spell of dyspnea often accompanied with a digestive disturbance, though at no time of a serious nature. The apex of the heart was just outside of the nipple line, where it had been since I first saw her, and there was a mitral regurgitation. No evidence was ever found of disease of the kidneys. The last thorough examination of the urine was made 24 hours before the onset of the edema and no casts or albumin were found. Another specimen taken after the onset of the attack showed no albumin.

Early in the fourth month of her pregnancy the patient was started on small doses of tr. strophanthus. This was gradually increased as the strain on the heart became greater. I followed the method of Jardine of Edinburgh in using strophanthus, for he has obtained such good results with it in a large number of cases. The results in this case appeared very good, for the patient was doing nicely till the end of the seventh month. During this month she felt exceptionally well in spite of the fact that she was becoming very large. The abdomen was too tense to make any accurate diagnosis of the contents of the uterus. There did not seem to be any reason to doubt the length of the pregnancy.

On the third of last November, just two months before she expected to be confined, she had some shortness of breath, but not more than she had often had, and a little irritating cough. I had planned to see her the next day, November 4, but was not able to call. Late that evening, however, I was asked to see her because the dyspnea had increased. The minute I stepped into the room I suspected pulmonary edema. The patient was sitting up in bed somewhat cyanotic, and the breathing was rather labored. There were a few fine rales at the base of the lungs. The apex beat was still just outside the nipple line. The amount of urine had been somewhat less than usual for the past 24 hours and there had been some swelling of the feet for the same period. Active treament was at once started, and, as a result of hot packs, cathartics, digitalis and strychnin, the patient was so comfortable in about four hours time that I left her but not without first telling her husband that it might be necessary to empty the uterus on short notice and that it certainly would be if there were a return of the symptoms. It was the earnest wish of all to have the pregnancy continue at least two or three weeks more if possible in hope of saving the child. I saw the patient again about four hours later, that is eight o'clock the morning of November 5, and found she had been quite comfortable though at times she had had slight dyspnea. A tank of oxygen was sent to the house during the forenoon in case of emergency.

At noon the patient was feeling much better and slept a little. At three in the afternoon she suddenly became very much worse and on reaching the house I found her condition most critical. I immediately ruptured the membranes in hope of reducing the pressure enough to give relief. A large amount of water escaped, the child settling firmly against the os. The cervix was so rigid that one finger could not be pushed into it. In spite of the constant use of oxygen, started at the beginning of the attack, the patient was intensely cyanotic and her breathing was most difficult.

Coarse rales were heard all over both lungs and her condition was desperate. Bleeding might relieve the symptoms but only temporarily. Emptying the uterus was the only hope. To attempt to dilate the os manually would only result in seeing the patient die during the attempt and vaginal Cesarean section was the only choice. Preparations were hurridly made and the operation was done with Drs Lee and Season assisting. When the patient was put on the table I did not expect to see her leave it alive. So deeply cyanotic was she that little chloroform was needed, not over half a dram being used altogether. The uterus was opened by an incision through the anterior lip and lower uterine segment and posterior lip, forceps were applied and a 4½ or 5 pound child delivered. Then was seen why the trouble had come so early in the pregnancy. There was another child and, as with the first, there was also an excessive amount of amniotic fluid. This child was also easily delivered. Both were stillborn from the same cause that was so rapidly killing the mother. The placenta was delivered and the patient allowed to bleed quite freely, after which the uterus was packed and, as the cyanosis was rapidly clearing up, sutures were put in the incisions. Not over five or six minutes were occupied in emptying the uterus and 20 or 30 more in putting in the sutures. At one time the pulse became very weak. This may have been due to the rapid delivery, which is not wise as a rule in heart disease, but the urgency of the case seemed to justify such a chance. The patient was put to bed and soon became conscious. The cyanosis had almost entirely disappeared and the dyspnea was markedly less. The urgency of the case was apparently over, but the danger that the heart could not regain its strength still existed, for the apex beat was in the midaxillary line. For four hours the progress of the case gave hope of a possible recovery, when, without warning, the heart stopped beating.

There are a few points I wish to emphasize before concluding:

1. The heart which was judged unable to stand the strain of a pregnancy was forced to endure a double burden and in addition a double hydramnios. The strain in the average case of pregnancy is not as great at term as it was in this case at the end of seven months.

2. Considering the absence of kidney complications, the onset of pulmonary edema was not expected when the heart had been acting so well.

3. The value of vaginal Cesarean section for rapidly emptying the uterus was unquestionably demonstrated. The patient, though in extremis, did not receive any shock from the operation.

4. I was asked whether if the uterus had been emptied the first day, the patient might not have been saved. No one can say. If when she was improving it had been done and she and her babies had been lost the question would just as reasonably be asked whether it would not have been better to wait. However, the great question suggested by this case is, what shall be our attitude in pregnancy if pulmonary edema develops either as the result of a heart or kidney lesion, even if it does respond to our treatment? None will dispute the seriousness of the complication in any condition, whether pregnant or non-pregnant. It would be hard for me in a similar case to refrain from immediately emptying the uterus. Would it be too radical?

5. To refer again to the paper I quoted at the beginning, I would say, that we, as physicians, are not justified in assuring any patient who has an organic heart lesion that she can safely go through the strain of childbirth.

1917 E. 90th Street

Notes on Club-Foot, with Special Reference to Treatment

By HENRY O. FEISS, M. D., Cleveland

The Latin name for club-foot is *talipes equinovarus,* and in order for a foot to be "clubbed" it must have both the equinus and the varus, the equinus being the plantar flexion and the varus the inward bend. The term *talipes* is the Latin name for a foot which is deformed and in itself does not mean club-foot.

Broadly speaking, there are two kinds of club-foot: first, that acquired before birth, and second, that acquired after birth.

The club-foot occurring before birth, the so-called congenital type, is usually supposed to follow some mechanical displacement in the uterus and is often associated with deficient liquor amnii. Those occurring after birth may be due to various predisposing causes, but we need only concern ourselves here with those which follow paralysis, as they are the common ones. So, practically speaking, the best classification is into congenital and paralytic types.

In the paralytic type we usually find that the muscles paralyzed are those on the outside and front of the foot. The condition is caused by a loss of muscular balance so established. Normally, we understand the muscles leading to the foot to be of equal strength all around; therefore, if the muscles on the one side are paralyzed and the opposing ones have a chance to contract, the foot reacts according to that contraction. The muscles usually paralyzed are the peroneals, the tibialis anticus and the long extensors. The structures which contract are the tibialis posticus, tendo Achillis and the plantar muscles and fascia. In spastic paralysis the deformity is also due to a loss of balance but brought about by the increased spasticity on the inner and posterior sides rather than by any actual loss of power on the opposing sides. Congenital club-foot is often bilateral, and paralytic unilateral.

Whether the case be congenital or paralytic, the usual deformities found in the typical club-foot are threefold: first, the flexion of the foot, that is, the equinus; second, the inward twisting and adduction of the foot at the ankle, or the varus, causing the foot to point inwards and its sole to face inwards and upwards; and finally, a very important deformity due to the con-

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Read before the Clinical and Pathological Section of the Academy of Medicine of Cleveland, January 3, 1908 traction of the plantar fascia, namely, a bending of the foot at the mediotarsal joint, so that you will find in the untreated case a fold in the skin representing the bend of that joint. This fold is referred to as Adam's groove. This deformity may also be referred to as varus, so we have both varus of the ankle and varus of the foot. Besides these things there is a marked prominence on the outer border due to the sharp angle formed by the bend in the tarsus.

Looking at the skeleton of the foot, we find the bones arranged as might be expected from the external contours, and if the case is permitted to remain uncorrected long enough, not only will the faulty relationship be maintained but actual change of shape in some of the bones will occur. An important point is that the line drawn through the mediotarsal joints instead of running in a coronal plane, now points inwards and backwards. The scaphoid may be so far displaced backwards as to articulate with the internal malleolus. The change in shape of the individual bones of the tarsus depends upon the amount of the deformity and its duration. The astragalus is especially prone to deformity, taking an inward bend in accordance with the inward bend of the foot. Accompanying these changes in the skeleton the tendons also lose their old relationships and the tendo Achillis, for example, may be located immediately behind the internal malleolus. So far as the varus deformity is concerned, the best way to understand it is to picture the long axis of the foot diverted at the ankle and at the same time bent in its own course.

The diagnosis requires no comment except that we ought to distinguish between congenital and paralytic types. For this we have the history and the fact that in the paralytic types, following infantile disease, the limb is cold, the knee-jerk is absent and the calf atrophied. In spastic paralysis the knee-jerk is increased and we have the other signs of spastic palsy. If the patient is allowed to grow up with a club-foot his gait becomes characteristic. In the double case he must lift one foot over the other in order to get them past each other. In the single case he has a limp, and in either case he can get around only with great difficulty. Callosities develop on the points of pressure and become very painful. In my opinion, a person is better off with an artificial leg than with a club-foot. The prognosis as regards a cure is quite good, provided the treatment is begun early. The treatment after adolescence is difficult and dangerous.

Treatment: In conducting the treatment of club-foot, I have never been so far influenced by any particular method as to adopt it as such, I have rather been persuaded that there are many kinds of treatment which are good and that any kind as used by any particular surgeon, and advocated by him, simply represents the result of his own particular personal skill and experience. Therefore, if two orthopedic surgeons advocate methods which are radically different, the treatment may be equally good in the two instances providing each man carries out his own. Generally speaking, there are two methods of treating the deformity: one is the bloodless, the other the open method. The bloodless method depends for its results upon the perfect application of the plaster of Paris bandages, and the open method chiefly upon the operative skill. Whatever method is used the object must be exactly the same, namely, to correct the deformity, but this does not mean that treatment stops immediately after the foot is corrected, for actual cure is not really accomplished until the foot functionates properly. The reason that certain surgeons have not had good results by the bloodless method is simply because they have failed to carry it out long enough, they failed to understand that the ultimate result depends not merely upon a mere apparent correction of the foot, but chiefly upon the fact that the patient must be able to use that foot properly. This point implies that, whatever the method used, the foot must go into the correct position with the greatest ease, which again means that all the tight factors must be stretched. If the foot resists to any degree, perfect functional results cannot be expected. In a word, therefore, the foot must not only be reshaped, but it must be made limber and pliable, so as to enable function.

Another point worth mentioning, is that there are all kinds of club-feet, some corrected easily, and some only with great difficulty, some in which the ankle deformity can easily be cured, but in which the mediotarsal deformity is very stubborn, and some in which the equinus persists in spite of everything we can do; consequently, I come back to what I said before, that I use no definite method in the treatment of cases but try to suit the treatment of each case to its special requirements, adapting it to my own personal knack and experience, whatever they may happen to be. Therefore, I sometimes resort to the open method and sometimes to the bloodless method and sometimes to both. A good rule is to do everything as bloodlessly as possible but not to hesitate to use the knife if the results of the bloodless method are not advancing properly.

The thing which seems of greatest importance to me in indicating the method is the age of the patient, and it is from this point of view that I wish to go over the process of treatment with more minuteness. In the first place one might be called to see a club-foot at birth. The question comes up, should we begin treatment? By all means begin at once, and this treatment in the beginning stage should be to instruct the mother or nurse to manipulate the foot every day for 20 minutes or so. The manipulator is told to take the leg in one hand and to grasp the foot with the other, correcting the varus first, and then the equinus, applying rhythmic movements in the sense of correction. By doing this, the foot cannot be cured but it can be rendered so pliable in many cases that, when the surgeon finally takes hold of the case, his work is accomplished more quickly and easily. In some cases soon after birth it may be wise, instead of correcting by manipulation, to strap the foot up with adhesive plaster in a correct position. In others, a good plan is to construct a small brace which may be bandaged on the leg and foot holding the foot corrected. Manipulation can be carried out in connection with this brace. At the end of six or nine months all that may be necessary, following any of these plans of treatment, may be the application of plaster of Paris dressings by the surgeon for a few months, and then perhaps at the walking age a light brace which the child wears to the age of two or three, always carrying the treatment on some months after the foot looks perfect, in order to be on the safe side. A result so accomplished is an ideal one, no ether or operation being necessary.

Supposing now that these things have not been carried out or that they are not bringing about sufficient improvement, and the child is brought at the age of one year or so with the feet in decided equinovarus. In such a case it is necessary to give the child a little ether and to correct the foot forcibly after the method which I will go into a little farther on. Following that, no other manipulation may be necessary but several reapplications of plaster will be. The child is then permitted to walk with the plaster case on and even urged to do so. Later a brace is applied. If the child is older than that, say two or three years old, the treatment will be about the same, but will simply mean perhaps more than one manipulation under ether and also a longer period of after treatment. If the child is even older than that, say 10, 12 or 15 years, the same principles are used, trying of course to treat the case bloodlessly by forcible redressment under ether, but if the case is too rigid, resorting to a bone operation.

Tenotomies: Whether or not the bloodless method is used it will be necessary in the great majority of cases to tenotomize at least one tendon, namely, the tendo Achillis, and in many others it will be necessary to divide the plantar fascia subcutaneously. Besides this it will often be wise to cut the astragalo-scaphoid ligaments and the tendon of the tibialis posticus, which of course is contracted These are simple tenotomies and could not be said to complicate the bloodless method.

Ether manipulations: We have already mentioned the indications for ether manipulation. It is now appropriate to say a few words as to the technic, as it is of greatest importance. The best instruments are the surgeon's hands and with them he tries to do three things: to correct the equinus, to correct the varus and twist at the ankle joint, and to correct the varus at the mediotarsal joint. He works upon the foot for a reasonable length of time correcting one deformity at a time and by using considerable strength and pressure he will be able after a while, if the case is not too severe, to mold the foot into an improved position. Of course, the important thing to remember is that the foot must be made perfecly pliable before the plaster is applied. To save strength, he will, as a rule, use other implements besides his hands. The most difficult and important distortion is at the mediotarsal joint, and I find a very practical instrument in this correction to be the Lorenz wedge. With one hand on the heel and the other on the front of the foot, the outer border of the foot can be applied to the wedge so that the point of pressure lies upon it opposite Adam's groove. Then the foot is used as a lever and unbent upon the top of the wedge as a fulcrum. There is very little danger connected with this proceeding, the chief mistake being that the surgeon usually stops too soon.

The next proceeding is that of correcting the adduction and twist at the ankle joint. I have found the so-called Thomas wrench to be of great use here. This correction can be carried on in connection with the correction of the equinus. It is at this point that it may be necessary to divide the tendo Achillis and also the plantar fascia, the tendo Achillis always being divided at the end and not at the beginning of the process. The foot having been corrected as much as is deemed wise and made pliable up to that point of correction, the plaster dressing is then applied.

The plaster of Paris dressing: The trick about applying a plaster of Paris bandage to a club-foot is to make the windings of the bandage in the proper direction, namely in the sense of correction. Thus in a right club-foot you make your windings about the leg from the left to right as seen in front, pulling the foot over in a corrected sense as the plaster is applied, and in the left club-foot you make the windings in the opposite direction. Before applying the plaster of Paris bandage a light coating of sheet wadding is very carefully applied, not too thin and not too thick. If it is too thick, the plaster will slip around on the foot, and if too thin, the plaster will be too tight. Following the application of the bandages the foot is properly held until the plaster sets. Then it is trimmed at the toes. The color of the toes should be rose pink, not white and not blue. They should be evenly arranged and not crowded and the plaster should run to the tip of the big toe. It is always wise to inspect the case at the office the next day. If the case is from out of town and is taken home, the mother is informed to watch the toes carefully and if the color changes, either to call a doctor, who should be told to remove the plaster, or if a doctor cannot be had, to soak the plaster in water and so to remove it. If the child is to walk on its plaster, as is usually advantageous, the sole is to be reinforced by extra turns and a large shoe or sandal is fitted at the shoe-store. Such a plaster may be left on from four to eight weeks or even longer, when the next plaster is applied. In every manipulation and every reapplication of plaster we ought to get better correction than in the one before. I have here these photographs illustrating the correction of a case by the bloodless method. (Figs. 1 and 2.)

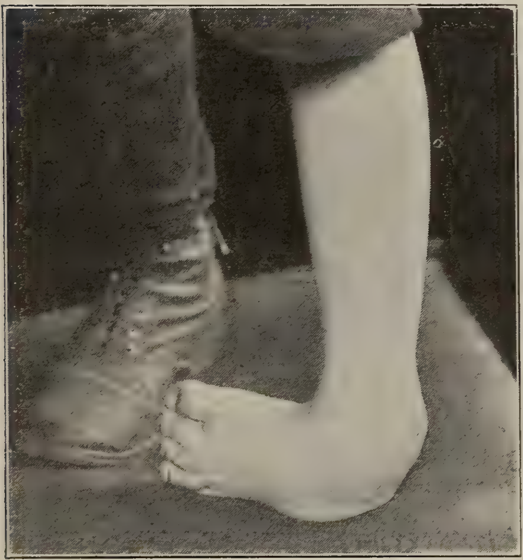

FIG. 1
Illustrates a case before correction

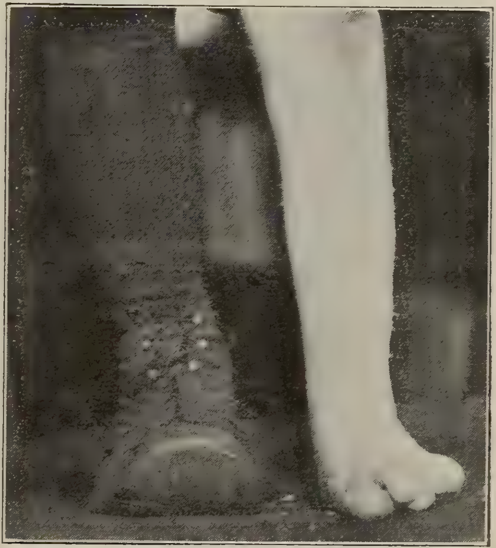

FIG. 2
Same case corrected by forcible manipulation

If it is deemed that such manipulations are not sufficient, or if we have tried one or two, and they are not successful, we resort to the open operation, doing as much as is necessary for the individual case. Thus we may simply remove a wedge from the os calcis. If that is not deemed sufficient we may take out part of the cuboid with it. If that is not sufficient we may take a large wedge from the outer side of the foot, even including a part of the astragalus, but as a rule a small wedge from the outer side of the foot is sufficient if supplemented by tenotomies. Following this a plaster is applied and then the stitches are removed and another plaster is applied. Then comes brace treatment again.

Braces: Following the stage of treatment by plaster of Paris we use braces. The simplest and one of the best braces is the one used by Mr. Jones of Liverpool, and consists of an upright running into the heel and up the inner side of the foot. The ankle is strapped to the upright. This brace can only correct the varus at the ankle and some of the supination but it cannot correct the mediotarsal varus. Consequently, if traces of this deformity are left we may be obliged to use the Taylor club-foot shoe. The secret of this brace is in its fitting. This must be done, or at least supervised, by the surgeon, as in the case with all braces. If the patient "toes in" after the brace is applied it may be necessary to run it up higher, so as to include the pelvis, for this toeing in is sometimes due to the position of the hip joint and to a twist in the tibia. Occasionally the toeing in can be corrected by spiral straps running around the leg.

Flaccid club-feet: We have so far considered only the rigid club-foot but occasionally following paralysis we have a flaccid club-foot. Here it may be necessary to resort to a tendon transplantation. Thus if the peroneal tendons are paralyzed and that of the tibialis anticus, we may transplant part of the tendo Achillis to the outside of the foot and shorten the anterior tendons. Later we can apply a brace. There are a number of other procedures for carrying out tendon transplantation, depending on the number of tendons paralyzed and their location, the point being simply to attach good tendons to the points where the bad ones are attached. If this is not sufficient for these flaccid cases we may attempt an arthrodesis, that is, making a stiff ankle joint with the foot in the best position for function. Some authors recommend the removal of the astragalus for some of these pronounced club-feet.

In closing, I wish to emphasize that all these methods of treatment require a lengthy time. None of them can be carried out quickly, for, as I have shown, we must not simply correct the foot and make it pliable, but we must also enable the patient to use it. If the bones have been in faulty relationship for many years and are then readjusted so that they are permitted to functionate properly, they must be artificially held in their new position until they adapt themselves to their function.

Once this is begun the natural processes will aid and tend to reshape the bones until they become permanently adapted to their new requirements. If it were not for these natural processes of adaptation in the living foot we could accomplish nothing.

Syphilitic Myelitis—A Clinical Lecture

By JOHN V. SHOEMAKER, M. D. LL. D.,
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This exceedingly interesting case of syphilitic myelitis presents the following history:

The patient is a male, aged 38 years, nativity American, occupation, stage carpenter. His height is five feet nine inches, and while in good health he weighed 152 pounds but is now quite emaciated and weighs only 130 pounds.

Family history: His mother died from puerperal fever, but the father is living and in good health. The three sisters are living and well, but his four brothers are all dead. One died of pulmonary tuberculosis, one of gastritis, one of scarlet fever, and the other in infancy.

Previous personal history: As a child he had scarlet fever, smallpox, whooping cough, mumps, and measles. Otherwise he has always been well until the beginning of his present illness. Sixteen years ago he was infected with syphilis, the initial lesion being present on the penis as evidenced by the remains of a typical scar. He also had gonorrhea eight years later and a reinfection three years after that date.

Social history: He has been married for the past two years and lives with his wife in an apartment house. They have no children. The wife is in good health.

Present illness: Four years ago he first experienced occasional pains shooting down his limbs along the course of the sciatic nerve. Sometimes at night the pain was so severe that he was unable to sleep, and as time went on the pains became more frequent and more severe. The next symptom to appear was dizziness when he was in the dark, but he never fell down. Three years ago he had two perforating ulcers on his left foot, followed by a falling of the posterior arch of the foot. One year after these ulcers had healed, two similar ulcers appeared on each foot. His general condition gradually began to decline. He experienced difficulty in walking, his feet felt numb and cold as though they were asleep. He next noticed that his vision was not acute, he had sensations of oppression as though there were a tight band around his waist, and he now has pricking and burning sensations over his abdomen. For the past eight weeks he has suffered from indigestion, he is nauseated at the sight of food and often vomits, which is sometimes caused by paroxysms of coughing. Occasionally he feels a lump in the hypochondriac region. During the past three months he voided urine involuntarily, and now has involuntary bowel movements as well.

Physical signs: There are no abnormal physical signs present over the chest except that a mitral murmur, systolic in time, can be heard at the apex beat, but compensation is well established. His tongue is heavily coated and his breath is quite offensive; this, as well as the history of nausea and vomiting, is indicative of his gastric disturbance. The liver and spleen appear to be normal. Severe tenderness can be elicited over his back and the abdomen below the umbilicus. The lower limbs are emaciated and sensibility is diminished. The cutaneous and tendon reflexes are absent in the legs and lower portion of the abdomen. His eyes are defective and respond slowly both to light and distance. The upper limbs are entirely free from disease and are well developed.

The range of temperature is from 100° to 102°; the pulse varies from 90 to 110 per minute and respiration ranges from 18 to 24 per minute.

Urinalysis shows a specific gravity of 1022; reaction alkaline; odor ammoniacal; light flocculant sediment; albumin present; glucose negative; indican present; microscopically, two long narrow hyaline casts were found; also a few cylindroids, erythrocytes, pus cells, leukocytes and amorphous urates were present.

Diagnosis: The diagnosis of syphilitic myelitis is based on the history of infection and upon the typical onset and symptoms present. The chief symptoms being, loss of motion and emaciation with anesthesia of the lower limbs; loss of the deep and superficial reflexes, involuntary bowel movements and urination, sensation of a constricting band about the waist and pain and tenderness along the spinal column, especially of the lumbar portion. That only the lumbar portion of the cord is involved is apparent from the fact that the body above the umbilicus is unaffected.

It is often difficult to make an absolute diagnosis of this disease, because identical symptoms are present in some other disease, such as spinal congestion, spinal paralysis and poliomyelitis. The differential diagnosis in distinguishing these diseases is as follows:

MYELITIS	SPINAL CONGESTION
1 Onset slow	1 Onset sudden
2 Paralysis well marked and is progressive	2 Paralysis slight and stationary or diminishing
3 Pain on pressure over the spine	3 No pain on pressure over the spine
4 Reflexes absent	4 Reflexes present, may be diminished
5 Urine alkaline in reaction	5 Urine acid and clear
6 Sensation of constriction about the waist	6 No sensation of constriction about the waist
7 Sphincters act involuntarily	7 Sphincters are normal

MYELITIS	SPINAL PARALYSIS
1 Onset slow	1 Onset sudden
2 Cause due to exposure, infections, fevers or syphilis	2 Cause due to injury or shock
3 Pain in the lumbar region on pressure	3 No pain on pressure
4 Urine alkaline and cloudy	4 Urine acid and clear at first
5 Paralysis of sphincters appears slowly	5 Paralysis of sphincters appears suddenly
6 Temperature elevated	6 Temperature normal.

MYELITIS	POLIOMYELITIS
1 Paralysis progressive	1 Paralysis not so progressive under medication
2 Sphincters paralyzed	2 Sphincters normal
3 Urine alkaline	3 Urine acid
4 Sensation impaired or lost	4 Sensation seldom affected
5 Atrophy of muscles is slow	5 Atrophy of muscles is rapid

Pathology: On macroscopic examination the affected cord on section rises up more than the normal cord. The contour of the gray matter is less distinct and hemorrhagic areas are usually present which may be followed by cavity formation. In advanced stages the cord feels rather soft to the touch.

Under the microscope will be seen red corpuscles and leukocytes simulating pus cells. Usually the axis cylinders of the nerves or their sheaths are destroyed. The ganglion cells have lost their prolongations and are rounder or are entirely destroyed. The blood-vessels of the cord are dilated and show hyaline degeneration.

Etiology: The cause of this patient's trouble undoubtedly is syphilis acquired 16 years ago. Among the other causes considered are exposure to wet and cold, exhaustion, and sometimes infectious diseases, such as typhoid fever, diphtheria, scarlet fever, small-pox and puerperal fever.

Injuries to the spine and the growth of tumors causing pressure have been found to be also the cause of this disease.

Treatment: In treating this patient we direct our attention chiefly to hygienic considerations, since no curative measures exist in medicinal remedies. The pathologic condition of the cord can never be restored to its normal activity. Cleanliness is all important to prevent bedsores. The patient should receive an occasional salt water bath, and general bathing daily, after which the skin should be well dried and rubbed with alcohol containing a little alum. If the patient is compelled to remain in bed the draw sheet should be dusted with talcum powder. Every effort should be made to avoid irritation of the skin.

The diet must be nutritious, digestible and easily assimilable. Care must be exercised in the quantity of food so that the patient may not overload the stomach and in this way disorder his digestion.

Medicinally we treat the symptoms on their merits as they arise. For this patient's vomiting we gave him a tenth of a grain of calomel every half hour for fifteen doses followed by a saline purge, after which a grain each of bismuth subnitrate and cerium oxalate was administered every three hours until relieved. During the time his digestion was so disturbed he received only milk as food. His digestion is much improved and he is now taking soft diet.

To relieve the pains, especially at night, he receives a suppository containing

℞ Extracti hyoscyami
Extracti cannabis Indicae ....aa. gr. ¼
Camphorae monobromatis .... gr. V
Olei theobromae .... q. s

Misce. Fiat suppositorium ....No. ṫ
Sig. One such suppository every four hours.

For the disease itself we prescribed for him the following combination, which is indicated owing to the cause of the disease

℞ Potassii iodidi .... gr. cc
Fluidextracti cimicifugae .... m cc.
Syrupi sarsaparillae compositi......q.s. ad. ℥ VI
Misce.
Sig. Two teaspoonfuls in a glassful of water three times a day

Should this combination upset his digestion we will stop the mixture and treat the patient entirely symptomatically.

We do not expect to cure the patient, but may be able to arrest the development of further pathologic changes of the spinal cord by the use of the syrup of hydriodic acid.

Prognosis: The prognosis of this patient is bad. I do not believe that treatment will be of any benefit to him other than to relieve the immediate symptoms as they arise with the proper drugs. Recoveries are exceedingly rare. After the patient has fully developed the disease, termination by death occurs usually in from a few months to a few years.

When the disease develops rapidly death may occur in from a few days to a few months.

The Cleveland
Medical Journal

CONTINUING { THE CLEVELAND MEDICAL GAZETTE and
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MONTHLY

The Official Organ of the Academy of Medicine of Cleveland

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EDITORIAL

Serum Treatment of Epidemic Cerebrospinal Meningitis

The wide spread epidemics of the last few years have stimulated a number of observers to attempt the preparation of an antiserum analogous to that against diphtheria. In this country the work has been taken up by the Rockefeller Institute and the first publication of results is found in the January number of the *Journal of Experimental Medicine.* Flexner and Jobling have been working on the problem for some time, and it is interesting that the first cases on which the serum was tried occurred in the Castalia epidemic, and that the actual injections were made by a Cleveland physician.

The serum is prepared by inoculation of horses, and is bactericidal rather than antitoxic, having its effect rather on the bodies of the diplococci than on their products, though it is probable that there is at least a small amount of antitoxin also present. Intravenous injections were found to be unsatisfactory, and at present the serum is introduced through lumbar puncture after removal of some of the excess fluid. This brings the bactericidal serum directly in contact with the bacteria, while subcutaneous injection is notably slow of absorption into the spinal canal. Microscopic and cultural examination of the fluid drawn at subsequent lumbar punctures shows a decrease in the number of the organisms, and especially in their ability to grow on media. Phagocytosis also appears to be markedly increased. Forty-seven cases were treated in all and 34 recovered. In four of the fatal cases the injection of the serum was so late that death occurred in a few hours, and with the omission of these the death rate was 20%, much smaller than that among the untreated cases. Results, in general similar to these, with sera prepared in about the same way have been reported from abroad and, although the total number of cases is too small for any wide generalizations, it would seem that there is marked promise in the treatment, and that careful observation of such cases as fall under the notice of each physician will soon give a body of information which will allow authoritative comments on the subject. Serum will be supplied to physicians under certain restrictions to aid in bringing about this desirable result.

Facilities for Hydrotherapeutic Work

The physicians of Cleveland were invited to visit the new Y. W. C. A. building on Saturday, January 12, in order to inspect the splendid new gymnasium and baths with which the establishment is equipped. Hydrotherapeutic and gymnastic measures, for the relief and cure of disease, have not, perhaps, received the attention they deserve, and this may be partly explained by the fact that, until recently, due stress has not been paid to them in the medical college curriculum. In the *Medical Record* for January 18, 1908, Simon Baruch emphasizes the neglect of instruction upon hydrotherapy in the medical colleges of this country. Columbia University was the first to institute a regular course in it by creating a special chair of hydrotherapy. He points out that only for the past decade has the subject received due attention in Europe and it was taken up there only when it was found how valuable these measures had proved in the hands of irregular practitioners. The regular profession today are attacked by such irregulars as the osteopaths because they are "drug doctors" and it is perfectly true that we often fail to take full advantage of other means of treatment than the administration of medicines. So far as this city is concerned, if suitable facilities for carrying out such treatment already existed, the fact was unknown to many of the profession.

It is hoped, by those in charge of these departments at the Y. W. C. A., that physicians will avail themselves of the opportunities offered by the Association and that if hydrotherapy or gymnastics are considered advisable for any female patient, she may be referred to the Y. W. C. A. and suitable instructions for carrying out the treatment conveyed to those in charge of these departments.

The gymnasium is most thoroughly equipped with the latest apparatus and a regular instructor is in charge to direct the exercises so that no harm may result. The baths include Turkish, Russian, shower and needle baths, an electric-light bath and every facility for hydrotherapeutic work. An experienced nurse is in attendance to see that the instructions of the physician are accurately carried out.

The good work accomplished in a great many directions by the Y. W. C. A. deserves the highest praise and the support of everyone and we sincerely trust that the departments referred to may prove especially successful and that the profession will bear in mind the fact that they may avail themselves of the facilities offered by the Association.

The Passing of the Board of Health

A recent ordinance of the Cleveland City Council abolished the Board of Health and created a new Department of Health under the supervision of the Board of Public Service. The members of the Health Board accordingly handed in their resignations. Under the new arrangement Mr. Starr Cadwallader has been appointed Director of Health and has already taken steps to familiarize himself with the details of his work. What futher changes are to be made in the personnel or conduct of the department are at this moment unannounced, but its organization and work will be watched with the keenest interest by those most vitally concerned in its efficiency,—the medical profession.

It is a matter of congratulation that a gentleman of such attainments as Mr. Cadwallader should receive this appointment and we look forward with satisfaction to the fact that he will at all times co-operate with the profession in all things that pertain to public health. There will undoubtedly be questions arise in the administration of the department that will require the opinion of a trained sanitarian. We trust that the services of such an expert will be rendered available in the near future.

Vivisection

There are many well-intentioned people in this world, actuated by the most humane motives, who are not sufficiently broad-minded to look beyond immediate details to see the ultimate results that are aimed at,—such are the opponents of vivisection. The infliction of pain on the lower animals, in itself, and with no other object than mere curiosity, is most brutal and reprehensible; unfortunately this is apparently the construction that is too often placed upon the actions of those engaged in experimental work on animals. The antivivisectionists fail to grasp the point that many of the triumphs of modern medicine and surgery, which have saved untold suffering and innumerable lives in human beings, would have been utterly impossible without such means. It is said of the great Pasteur, a most tender-hearted man, that nothing gave him greater distress than the suffering he had to inflict in carrying out his animal experiments which, in the end, conferred such a wonderful boon upon humanity.

A recent sensational article in one of the Cleveland papers directed the notice of the public to this matter. The attention of the Humane Society had been drawn to the fact that animal experiments were being carried out in one of the hospitals in this city and that the dogs which were used were allowed to recover from the anesthetic; as a result of this investigation of the Society, the dogs were ordered killed.

In devising any new operative procedure or in acquiring facility in the technic of a difficult or dangerous operation, before employing it upon human beings, it is not only the immediate results that count but the ultimate outcome is often the essential point and this necessitates the recovery of the animal from the anesthetic.

Not only operative procedures but inoculation experiments upon animals must fall under the ban of the antivivisectionists. Thus would the production of immunizing sera, which have proved of incalculable value, be rendered impossible. Experiments upon transfusion, anastomosis of blood-vessels, transplantation of organs and a host of other investigations of the utmost importance to mankind would be out of the question if the opponents of vivisection had the full sway they desired.

The regulation of vivisection is right and proper and fortunately many of the antivivisectionists are willing to concede that a certain amount of such work is inevitable and justifiable, but the decision as to what is and what is not permissible should be left in the hands of those who are competent to form an intelligent opinion in the matter.

Editorial Change

With the December issue of our contemporary, the *Columbus Medical Journal,* Dr J. J. Barnhill retires from the active editorship. That this will be a great loss to the *Journal* and the profession at large goes without saying. Dr Barnhill has been actively connected with the editorial work for the last 14 years, during eight and one-half of which he has been the editor. Not only has this occupied his time, but he has been engaged in teaching as Professor of Surgery in the Starling-Ohio Medical College, and he has also done much hospital work. The editorship of a medical publication involves far more labor than would be supposed and it is bound to encroach upon the time that the editor should devote to his practice and other duties, for the financial recompense of such a position is usually nothing or very little. It is to be hoped that Dr Barnhill's influence will still be felt in the conduct of the *Journal* and surely it will be impossible for him to maintain other than a very active interest in its welfare. We regret that circumstances have been such that he has felt it necessary to resign the position of editor which he so satisfactorily filled.

Since the above was written the appearance of the first number of the *Columbus Medical Journal,* under the management of Dr C. S. Carr, the new editor throws much light upon the subject. The character of the *Journal* is now completely changed, it is no longer one for the physician but for the laity, so that we are not surprised at Dr Barnhill's resignation. His connection with it under the present circumstances would be out of the question. The *Journal* has found it financially impossible to continue under its former character and it is deplorable that enough support could not be secured to maintain its ethical standard. At the present time there are so many publications supported by the great medical organizations, that those of a local character find it a matter of increasing difficulty to make both ends meet. It is unfortunate that with the change in management the title of the *Journal* was not changed to be more in keeping with its new character.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Gastric Ulcer: John H. Musser, in the *American Journal of the Medical Sciences* for December, 1907, concludes concerning gastric ulcer, that it is a medical disease. Gastric ulcer with complications and sequels is sometimes a surgical disease: if perforation occurs it becomes a surgical affection at once; if hemorrhage occurs acutely, it is rarely a surgical affection; if repeated and chronic it is a surgical affection. If the ulcer is productive of perversion of secretory function alone, it remains a medical affection. It is wrong to submit such patients to operation, unless motor disturbances become prominent. If the symptoms of gastric ulcer become continuous in spite of medical treatment, and incapacitate or threaten life, and if hemorrhage recurs and secondary anemia arises, it is a surgical disease. Such cases, however, are always attended by organic sequels. The great frequency of chronic gastric ulcer with sequels requiring operation, is due to neglect of the treatment of an ulcer in its incipiency. He advises if it is a case of simple uncomplicated ulcer, to employ rest, at first absolute, and later modified; a suitable diet; and the drugs indicated for at least four months. If attended by an organic complication, surgical measures are in order. If perforation exists there should be no delay in operating. If hemorrhage exists operation is rarely necessary, and if acute not unless the peril of hemorrhage outweigh that of operation, a nice estimation of values. It should be the duty of the physician to associate with himself a surgeon to the end that accidents may be taken care of at once, and organic sequels relieved. After the surgical procedures of necessity are carried out the patient must be treated medically over a period of four months at least; hygienic and dietetic treatment should be continued over a period of years. A patient who has had gastric ulcer should for all time observe hygienic and dietetic rules.

Radium: In the *Medical Record* for October 12, 1907, Robert Abbe concludes as to the action of radium, that radium ranks not with caustics, cautery, antiseptics or medication, but with specifics. This does not mean a "specific" for cancer, in the popular sense, but for erratic cell growths, constituting some types of tumor tissue in the earlier stage of invasion, or of moderate development. Details of the methods of using it have not yet been fully worked out. The dosage, so to speak, or time of exposure necessary for curative action, is as yet empirical. Some apparent cures of small epitheliomas or sarcomas have endured already more than three years. A photographic plate provides a good test, to show the working force of an unknown specimen of radium, in comparison with one of standard strength. It is not entirely a mysterious force, but, in part at least, is an electric discharge, essentially of negative elements. Hence, as far as it is possible to say, it suggests a theory of its action in that it may supply an element of electric force, vital to normal and orderly growth, the loss of which may have caused a disorderly cell growth, which, in the aggregate, constitutes a tumor mass. It is supplementary to Roentgen rays and, in some cases, is efficient when they fail. The over action of strong radium is destructive and vitiates the benefit of moderate use. The best results have followed one hour's exhibition of the working unit (10 mgs. radium bromid) on small growths, and three to four hours on larger ones, with an interval of one month for study of the effect. Ischemia of the parts during treatment greatly enhances its action. Pigmented moles, melanotic growths, giant-cell sarcomata, and epitheliomata of the eyelids, face and body, are particularly susceptible to its curative action as a specific agent, but its value in nevoid and angiomatous tumors is due to its irritant action, producing obliterating endarteritis and fibroid changes.

Cardiac Tonics: In the *Therapeutic Gazette* for December (from *Folia Therapeutica*), Haines points out that of the group of cardiac tonics all exert some action on peripheral blood-vessels; they may cause a most intense constriction, as in the case of apocynum or squill, or a very small effect as in that of strophanthus. In heart disease and its complications, the result of persistently high arterial blood-pressure it is obvious that we should not be content with administering digitalis in the routine manner. We must aim not only at increasing the efficiency of the heart, but at keeping the vessels as much dilated as possible under the circumstances. For this purpose vasodilator drugs, particularly the nitrites, have been suggested with the cardiac tonic. Unfortunately such a combination does not produce the desired effect. First the nitrite effect overshadows that of the cardiac drug and vasodilation is the prominent feature; then the cardiac drug obtains sway and the dilation disappears. Nevertheless beneficial effects have followed the use of erythrol tetranitrate combined with digitalis or strophanthus. The author points out that other vasodilators are now known, almost as efficient as the nitrites and without some of their objectionable properties; such are the purin derivatives: caffein, theobromin and theophyllin; all these bodies increase the rate of the heart by direct action on the heart-muscle, dilate the peripheral blood-vessels, as has been shown by Dixon, and augment the flow of urine. While caffein for the time being has its peripheral dilation overshadowed by the first vasoconstrictor effect, theobromin has little or none of this central action, and so it produces an immediate dilation of the vessels. It may be given as duiretin, a combination with sodium salicylate; the combined action of a cardiac tonic with a vasodilator of the nature of duiretin is to slow and strengthen the heart-beat and to increase the flow of blood through the vessels, including the coronaries. Such a combination of drugs has produced an excellent effect in cardiac dropsies, failing hearts, and the general degeneration of the cardiovascular system following persistent rise in blood-pressure. Fifteen grains of theobromin and 10 minims of a reliable tincture of digitalis should be given every four hours for two or three days; then omit for some days and again use it.

Syphilis: John A. Hawkins, in the *New York Medical Journal* for December 7, states concerning syphilis, that no two patients will take the same dose of a drug and get exactly the same effect. He has seen the gums affected in a patient taking one grain of yellow mercurous iodid per day, and on the other hand it is not uncommon to see patients thrive on from 20 to 50 or more quarter grain tablets a day. The patient must be given all he can take without poisoning. There are better forms of mercury than the protiodid, as it is prone to produce stomatitis and gastro-intestinal distress in some patients long before the maximum dose is reached. For this reason gray-powder, blue-pill, or the red mercuric iodid is better for internal use. Deep muscular injections of gray-oil or the salicylate of mercury is really the best treatment, but many patients will not tolerate this, owing to the pain of operation or the fear of after-distress. In patients who cannot take large enough doses by mouth, the injection method often produces most remarkable results after but one or two treatments. This is also true when the lesions do not yield to internal medication. The advantage of it is that the patient is under control; you know how much of the drug he is getting and he needs to take his medicine but once in seven or 14 days. Mercury has been found in the urine 30 days after a single injection. For the late lesions, the most good has been derived from the daily hypodermic injection of biniodid of mercury in a watery solution. It is well to remember that mercury acts best on the younger products of syphilis, but not on the scleroses. He emphasizes the point that all disease due to non-traumatic arteritis, as paresis, tabes, true angina pectoris, aneurism, etc., are due to syphilis: that they are parasyphilitic or quaternary manifestations, and are seldom amenable to treatment as usually exhibited; that the iodids are of little value in this class of cases and benefit must be obtained through the use of mercury, preferably administered in the form of hypodermic injections of biniodid of mercury.

Influenza: The *Medical World* for January does not believe that any of the coal-tar series have a legitimate place in the treatment of influenza, as we have other safe drugs with which we may reduce the fever and allay the pain. The chlorodyne formula is preferred for this purpose, and any other drug that may be indicated, if it be not a cardiac or general depressant. Salol is also recommended, although its method of action is not clear, and the author habitually uses a diuretic and diaphoretic mixture of sweet spirits of niter and citrate of potassium; this has a good effect on the skin and kidney action, reducing the fever and quieting the bounding pulse. Supporting treatment is better than depressing and strychnin in generous dosage is recommended, as much as 1-20 or 1-16 of a grain every four hours may be given whenever any symptoms of depression appear; it frequently may be supplemented by four to eight dram doses of good whisky in elderly persons, or if the strychnin fails to produce enough stimulation. Insistence is placed upon the patient remaining in his room till convalescence is well advanced.

Hydrastis: In the *Journal A. M. A.* for January 4, William Whitridge Williams considers the effects of hydrastis and its alkaloids on blood-pressure. He states that hydrastis is usually considered as having marked styptic properties due to a local vasoconstriction, and has been recommended as a remedy of great value in uterine hemorrhages and hemoptysis. This is based mainly on clinical observation, but experimental evidence showed no constriction of the arterioles, so contradicting the clinical observations. He concludes, as the results of his investigations, that the most constant and conspicuous effect of the intravenous injection of hydrastis is a prompt fall of blood-pressure. With small doses the pressure promptly returns to normal and there may be a slight rise above normal; with larger doses there is only partial recovery from the fall of blood-pressure, or it may remain low. The two principal alkaloids of hydrastis—hydrastin and berberin—cause qualitatively the same blood-pressure changes, although berberin is the more active and is responsible for about 85% of the effect of hydrastis, hydrastin causing the remaining 15%. Hydrastis given by mouth or hypodermically causes no change in the blood-pressure, heart rate or respiration. Hydrastinin, an artificial alkaloid derived from hydrastin, causes a rise of blood-pressure above normal, which is usually preceded by a slight fall when injected intravenously. The rise is well sustained, and is principally caused by stimulation of the cardiac muscle. The results of this investigation do not support the clinical theories concerning hydrastis. It is possible that conditions in man and in disease may modify the actions observed by Williams, but this is rather improbable. He believes that at least the uniform contradiction of the experimental results and clinical opinions demands that the latter be examined critically before they are accepted.

Silver Nitrate: Harris Weinstein, in the *New York Medical Journal* for December 28, considers the value of silver nitrate in gastric diseases. His results seem to point, as would be expected from the character of the drug, to a slight astringent and germicidal action. He adds, however, that sole reliance should not be placed upon this drug, and that the removal of the causative factors of the disease under treatment is necessarily a condition upon which success or failure depends. He recommends it in all irritative conditions of the gastric mucosa, characterized by increased secretion, hyperacidity of the gastric juice, nausea, vomiting and pain. In gastric neuroses this drug exerts no influence upon the symptoms, and it is important therefore to exclude neurotic conditions of the stomach, although he admits this is at times almost impossible. In hyperchlorhydria silver nitrate will promptly relieve the distressing symptoms of this condition, but if the causative factors continue it is evident that the hyperchlorhydria will persist in spite of treatment, and will ultimately result in an inflammatory state of the mucosa. The part played by silver nitrate is not merely that of a symptomatic remedy in that it relieves the symptoms but also is an aid toward a permanent cure by virtue of its constringing effects on the vessels of the mucous membrane of the stomach. In benign pyloric stenosis with retention of the gastric contents the most effective symptomatic treatment he has found is a thorough washing of the stomach followed by silver nitrate internally. In fissures at the pyloric orifice productive of spasmodic contraction, gastric lavage, followed by the internal administration of silver nitrate, a non-irritating diet, and olive oil on an empty stomach, has never failed, in his experience with this disease, to effect a cure. For the relief of pain in gastric ulcer, whether acute or chronic, silver nitrate is superior to any other drug. The distressing heartburn, sour eructations, headache and constipation, that usually accompany gastric ulcer, are also promptly relieved. He summarizes his conclusions and states that silver nitrate should be employed in conjunction with other therapeutic agents in hyperchlorhydria, acute or chronic ulcer, benign pyloric stenosis, pylorospasm, and in acid, alcoholic and mucous gastritis.

Mastitis: J. S. Randenbush, in the *Medical Council* for January, advises in simple mastitis, should this develop in spite of all preventive measures, to discontinue nursing from the affected breast or breasts, attend to the nipples, remove the milk with a breast-pump, and make local applications. Hot applications give relief in a very short time, and do a great deal of good, and sometimes allay the condition. Camphor, in sweet oil or lard, when applied for this purpose, does effectual work, and he has never found any unpleasant effects from it, even when the child was allowed to nurse. One thing should be remembered when using the camphor applications, and that is to remove it whenever the inflammation is conquered, or the milk will be "dried up" to an undesirable extent. He has not found satisfactory results with potassium iodid, he gives quinin for the fever and infection as long as needed and has used strychnin, the dose and frequency being determined by the pulse and condition of the patient. This line of treatment has given him the desired results, and he rather avoids belladonna, lead, and phytolacca, especially if it is necessary to nurse the child.

Potassium Bichromate: In the *American Journal of Clinical Medicine* for January, E. G. Paxton writes concerning the value of potassium bichromate in the treatment of respiratory troubles, stating that like sanguinarin and calcium iodized it acts best upon those affections involving the fauces, larynx, trachea, bronchi and smaller bronchioles. An exudate of thick tenacious sputum with hoarseness from a cold, accompanied by a hard, dry, irritating cough, are the special guides to its selection, although it does not matter much what the stage of respiratory irritation may be, provided that thick tenacious sputum is present. In the third stage of chronic pharyngitis, its exhibition will often prove a happy surprise. It is valuable as a relaxant in croup and in capillary bronchitis. The usual dose is grain 1-67 every half-hour to two hours, the latter for chronic conditions. For chronic laryngitis three tablets, grain 1-67, with three granules of strychnin arsenate, grain 1-134, should be given before each meal; this combination he has found of value. A solution of 1-67 grain in a dram of water is very efficient as a spray in aiding the removal of thick tenacious sputum.

Suprarenin: The *Medical Bulletin* for December, 1907 (from *Lancet Clinic*), states that Kehrer has proved that suprarenin has a specific action on the muscular fibres of the uterus. Max New from certain experiments, which he has conducted, has been led to believe the views of Kehrer. A Cesarean section offered him the welcome opportunity to experiment on the human being. After the pregnant uterus had been exposed through the abdominal incision he injected a syringeful into the muscle of the uterus in three different parts. The uterus immediately contracted, becoming paler in color. The organ could be extirpated practically without the loss of blood. The author found the contracting effect of the suprarenin very pronounced and most gratifying. The effect of the suprarenal extracts on the muscular tissue of the uterus has been carefully studied by Kurdinoski. He believes, however, that this apparent contraction of the uterus is coincident with the contraction of the blood-vessels, and denies any specific action of the suprarenal extract upon the muscular tissue.

Contusion Pneumonia: S. E. Earp, in the *Central States Medical Monitor* for November, 1907, calls attention to this form of pneumonia, the causative factor differing from that in what we indicate by the term traumatic pneumonia. The lung has not been penetrated by an outside force but there exists rather a compression or contusion resulting from the blow of a blunt object. Even without external signs, the lobes of the lung may be injured, perhaps remotely from the location of the blow. A chronic condition of the lung, or even a tendency to tuberculosis, or the existence of old adhesions, favor an injury to the lung tissue. Another feature, to which attention is called, is the sudden onset and short duration of the disease. In a case which he reports the treatment was a bandage to the chest to restrict motion, sodium salicylate with anodynes and expectorants, recovery following. He quotes Litten to the effect that in these cases there may be no external signs and yet an ecchymosed lung. The lesion is most often the result of a fall from an elevation, but may be produced by a severe blow, by compression or by being run over, or by lifting weights. The points made are sudden onset, short course and high death rate, cases so far reported yielding 68% mortality.

Academy of Medicine of Cleveland

A special meeting was held Friday, December 27, 1907, at the Cleveland Medical Library. The President, H. W. Rogers was in the chair.

David Marine gave a Review of Some Recent Work on the Thyroid Gland. He said in part that: Situated in the most important district of endemic goiter in the United States, we have for the past two years been working experimentally with the forms occurring in the domestic mammals. At first we attempted to study the anatomic features of the human variety, but were early convinced of the utter uselessness of attempting to gain any further insight into the nature of goiter from such material. Indeed, it seemed only to increase the confusion already paramount. With this experience, we turned to the dog, which in Cleveland shows goitrous changes in the thyroid to the surprising degree of 90%. Since then our observations have extended to the ox, sheep, horse, cat and man.

In all the mammals examined, it was found that the primary anatomic changes in the thyroid were the same, viz., glandular hyperplasia. Upon this basis, for an anatomic study, we have to bear in mind four groups:

1. The normal gland.
2. The glandular hyperplasia.
3. Colloid goiter.
4. Complications supervening from any cause, natural or induced, at any stage of the changes in the preceding three groups.

For our present purpose we deal only with pure types of thyroid changes, hence all complications are excluded.

Group I. The normal gland is practically the same for all mammals examined,—the main differences being in the amount of stroma and in the size of the acini.

Group II. The glandular hyperplasias are likewise identical in all mammals examined in their essential anatomic features. As would be expected, we meet with all grades or degrees of the changes from the normal gland to that stage in which there is no longer any resemblance to the thyroid at all. Hence, at first, there is only an hypertrophy of the existing cells which may go on to actual hyperplasia of all the types of cells. A summary of the changes applicable to all degrees of glandular hyperplasia may be made as follows:

1. Increase in the size of the gland.
2. Increase in the blood supply.
3. Increase in the lymphatic drainage system.
4. Changes in the acinar epithelium from the normal (low cubical) up to the high columnar forms, depending on the degree or stage of the hyperplasia.
5. Reduction in the colloid (all degrees).
6. Increase in the gland's stroma.
7. In the more advanced cases actual invaginations and papillomatous ingrowths of the acinar epithelium.

Group III. Colloid goiters are again identical in all their essential anatomic features for all mammals examined. As would be expected, here also we have to reckon with all degrees of colloid enlargement because this condition is to be considered the resting stage of the glandular hyperplasia. Therefore, we would have all degrees of enlargement depending on the degree of glandular hyperplasia which preceded the colloid change. The return of a glandular hyperplasia to a colloid goiter is known as "Reversion."

Having briefly defined and outlined the anatomic features, we may summarize the observed phenomena, experimental and clinical, relating to the glandular hyperplasias as follows:

1. All mammals, thus far worked with, manifest all grades of symptoms from the normal through the cretinoid conditions to true cretins.
2. Glandular hyperplasia is most frequently observed in the young and they tend toward spontaneous recovery.
3. All grades of anatomic changes are observable from the normal glands up through the hypertrophies to the most marked glandular hyperplasia, and correspond directly with the various gradations of symptoms.
4. Experimentally one can produce the same anatomic changes in the normal dog's thyroid by partial removal (first noted by Halsted).
5. Experimentally one can produce the same changes in puppies by partial removal of the gland from the mother before pregnancy (first noted by Halsted), illustrating this statement I will cite the following experiments: A normal bitch was impregnated by a normal dog and kept under the usual laboratory conditions. The puppies all had normal thyroids. The same bitch was again impregnated, and immediately following impregnation three-fourths of her thyroid was removed. She was kept under the same conditions and fed with the same kind of food as before. The puppies all had enlarged thyroids. The same bitch was again impregnated and during the pregnancy was fed minute doses of iodin. The puppies at birth had normal thyroids. This is but one of several experiments illustrating what Halsted first observed experimentally, and also illustrates the preventative effect of iodin.
6. Hyperactivity of the gland is evidenced by the increased blood supply, the enlarged lymphatics, and the increased heart beat.

It was from the above data that the idea of "Reaction to a Deficiency" or "Compensatory Hyperplasia" arose. The question next to arise was what might this deficiency be? The iodin was the first to be excluded for reasons that are familiar to us all—the most important of which is the vast accumulation of clinical evidence for all mammals that iodin will cause a reduction or disappearance of the goiter together with a relief from the general symptoms.

Following this suggestion, W. W. Williams and myself made iodin determinations with histologic controls on each specimen and we were able to confirm Oswald's, Bauman's and Roos' previous work that in general the colloid varied inversely with the degree of glandular hyperplasia and that the iodin in general varied with the amount of colloid.

1. We were also able to add the logical conclusion that therefore the iodin would vary inversely to the degree of glandular hyperplasia. We found this relationship to be constant.
2. We also found, as many other investigators have shown, that upon feeding small doses of iodin it was stored in the gland with remarkable rapidity and that it disappears but slowly from the gland.
3. It was found that the administration of iodin-containing compounds will revert the glandular hyperplasia of the dog and cat in all cases.
4. That iodin will prevent the occurrence of glandular hyperplasia in puppies, from bitches from which three-fourths of the gland have been removed, and which otherwise would hypertrophy.
5. That iodin will prevent the occurrence of compensatory hypertrophy of the thyroid of normal dogs after partial removal, which would otherwise hypertrophy.
6. That endemic glandular hyperplasia of the thyroid does not occur along the sea-coast.

Now, given a case of glandular hyperplasia in the dog, sheep, ox, cat or man, what are the anatomic changes induced by the action of iodin?

They may be summarized as follows:

1. Marked reduction of the size of the gland as a whole (depending, of course, on the degree of the hyperplasia and the age of the animal).
2. Reduction in the blood supply associated with obliterating endarteritis similar to that observed in the uterine vessels during involution.
3. The acinar epithelium reverts from the high columnar to the low cubical form. This may take place in from two to three weeks.
4. A rapid accumulation of normally staining colloid.
5. There is a great increase in the iodin content over the control lobe and over the normal content of a normal gland.
6. The lymphatic trunks, so large and prominent during the glandular stage, are also markedly reduced in size.

Thus, to sum up, we obtain a change in the thyroid following the administration of iodin that is identical with colloid goiter. It is colloid goiter, and is to be considered the resting stage or the nearest normal condition that the gland, which has undergone glandular hyperplasia, can ever become. Now, if colloid goiter is the nearest normal the gland can become, after having undergone glandular hyperplasia, then ought it not obey the same laws as the normal gland? It ought to obey the same laws. It does obey the same laws. That is, by partial removal of a colloid goiter the remaining portion will undergo glandular hyperplasia or it will undergo glandular hyperplasia merely by restricting iodin in the diet.

Now, if this conception of colloid goiter be true, then the term "colloid degeneration" as applied to colloid goiter is a misnomer. And this is an important matter. It is the classification of goitrous conditions that has given rise to the greatest confusion to students of the subject. The almost countless variety of clinical types; the great variety of anatomic findings and the great susceptibility of the gland to complications—all have been used in formulating classifications, and hence we are forced to study the forms occurring in lower animals in which pure types are the rule and can be studied, unmarred by induced or natural changes. Virchow dwelt upon this important question at length but the confusion still exists.

To return to our subject: Can one apply the findings in lower animals to the forms occurring in man? I think so. I believe that relative to their position in the biologic scale, they apply absolutely. The important periods in the life of man when goiter is most likely to occur are:

1. In utero (so-called congenital forms).
2. During childhood.
3. During puberty.
4. During pregnancy.
5. During menstrual periods.

In all these periods the primary anatomic changes in the thyroid are the same, viz., glandular hyperplasia, and correspond exactly to the glandular hyperplasia of the lower animals. All these forms in man and animals have been characterized as simple goiters or simple hyperplasias as opposed to a form in man (so-called exophthalmic goiter) that has been called toxic goiter. For the present, the distinction is justifiable but by it we do not mean that they differ in any essential anatomic or physiologic feature but because in the toxic forms in man we have two features, viz., exophthalmos and the nervous manifestations, that are ordinarily not observable in animals. And in spite of the many reports in the literature of the occurrence of true exophthalmic goiter in various animals, I am not content that the exophthalmos and the nervous manifestations, so important and characteristic of the human variety, have been definitely demonstrated, though theoretically there is no reason why they should not be present in some form since all the other essential features are observable. In this review I have drawn freely from previous publications in:

1. Johns Hopkins Hospital Bul., vol. XVIII, pp. 359, 1907.
2. Jour. of Infect. Dis., vol. IV, No. 3, pp. 417, 1907.
3. Cleveland Medical Journal, vol. VI, Feb., 1907.

S. P. Beebe of the Loomis Laboratory, Cornell University Medical College, New York, spoke on Goiter and Serum. The speaker reviewed the basis on which his treatment rests, his view being that the pathologic change in exophthalmic goiter is a primary process and that the purpose of therapy should be to inhibit the excess of thyroid activity by means of a cytolytic serum prepared from the nucleoproteids of the thyroid, which, from previous work, he had shown to contain the most specific bodies of the glands. He admitted that there were strong arguments in favor of the changes in exophthalmic goiter being a secondary process, and that the matter is still unsettled. He reviewed his therapeutic results which showed roughly 50% considerably improved, and 20% of so-called cured cases.

G. W. Crile in discussing the Surgical Treatment of Goiter said that: "The non-operative treatment of Graves' disease has been greatly advanced by the brilliant researches of Beebe, constituting the most important therapeutic contribution in the history of this disease.

The statistics of Kocher show that in his hands the mortality in 254 operative cases is 3.5 percent., 83 percent. were cured, and there was not a single case that was not improved. What Kocher has done can, with experience, be done by other surgeons. There still remains to be conquered a well known and universally recognized group that requires new resources, viz., the acute toxic cases. The hyperthyroidism incident to operation in this class of cases is the rock upon which our surgical craft has often been stranded. If it heavily taxes the psychic state of the normal individual to face a surgical operation, what of a patient whose very disease itself is morbid fear?

One of my Graves' patients became so toxic when anesthetized for operation that none was done, yet she died in 12 hours from hyperthyroidism, the temperature rising to 110° before death. Another came to the anesthetic room in toxic delirium, was operated upon, and died in a similar manner soon after. Still another patient operated upon under local anesthesia became toxic to the degree of delirium by the time operation was begun. When she returned to her room her temperature was 105°. She died three hours later, the temperature reaching 107° before death and rising half a degree after death.

These patients were probably frightened to death. Their fate was sealed before the first incision was made. In Graves' cases, operations upon other parts of the body are nearly as fatal as operations upon the gland itself. Is it not probable that surgery has heretofore failed to recognize the true source of perhaps the greatest danger? Have we not in concentrating our attention upon the anatomy and the technical details overlooked the pathologic physiology? The following case is suggestive:

The patient was a young woman of the acute toxic type, who had been under observation for three weeks in Lakeside Hospital. The circulation was in an extremely unstable equilibrium. Even slight exercise or psychic excitation caused dilatation of the heart. The case seemed unpromising, indeed hopeless. Having the patient's consent for surgical treatment, her physician, J. C. Darby, and I decided to wait for a favorable opportunity to remove the thyroid without her knowledge, on the ground that hyperthyroidism may be psychically produced. It was planned that no mention whatever of operation should be made; that the day prior to the operation there should be as great elimination as possible; that the evening prior to the operation a hypodermic of morphin and atropin be given; that the morning of the operation the moment she waked she was to have 1/6 gr. of morphin with atropin, the shades of her room were to be kept drawn, and a little later when she became quiet atropin was to be instilled into her eyes to interfere with vision, her ears were to be filled with cotton to lessen hearing,—all of which would tend to place her in a negative phase,—and an hour later she was to have another 1/6 gr. of morphin. I would then see her and if her condition was favorable I would say that she was to have some inhalation treatment. This was to be done in her bed in her own room. It was further planned that we would then, under partial ether anesthesia, take her to the operating room and if her condition was satisfactory we would remove the gland in the ordinary manner. After the operation we would continue to give large quantities of water to favor elimination and continue to maintain the psychic quiet by giving morphia as needed. This program was carried out exactly as planned and it was found that she was easily anesthetized without her knowledge; that though she was an extremely bad risk she came to the operating table and went through the operation without a change in her pulse rate. She made an excellent recovery.

This is but a single case and has a corresponding value. Should further experience prove the assumption of the premises in this case, a whole group of inoperable toxic cases may become fair surgical risks. Even should this plan prove to be of little value, it certainly can do no harm. This case stands absolutely alone in my experience in its favorable operative behavior.

It is to be hoped that the fundamental principle established by Beebe and the brilliant results obtained by him in addition to the splendid achievements of other medical management and therapy will conquer this disease and relieve surgery of its task. I dare say that all will agree that we have not yet wholly reached that coveted goal.

Plain goiters and benign tumors have been surgically conquered. The mortality without selection of cases is now less than one in 100 operations. In my last 110 operations there has been no fatality. This is in contrast with a mortality of 30 or 40 percent. 40 years ago. The mortality in operations in Graves' disease is likewise falling. The end results are good. Until all of these cases can be cured by non-operative means we must strive to devise successful surgical measures. Perhaps the internist will be able to determine in the earlier stages of the disease whether or not the case will respond to non-operative measures and recommend for operation the intractable cases at a time when there is still left an operative margin of safety. A sufficient amount of the thyroid may then be removed either to effectively weaken or break one link of the pathologic chain, rendering the patient susceptible to the completion of the cure by management and therapy. The aim of the surgeon should be that of the closest co-operation with the physician in a certain crucial stage of the disease, in a well laid plan converting, by excision of a part of the gland, an uncertain or incurable case into a curable one."

J. P. Sawyer discussed some of the medical aspects of goiter.

The fifty-fourth regular meeting of the Academy was held at the Medical Library, Friday, January 17, 1908, with L. W. Ladd in the chair.

The Secretary, C. E. Ford, who is also the local member of the State Auxiliary Committee on Legislation, reported that:

The Pure Food and Drug Bill is ready for presentation, or by this time has been presented. Excepting in a few minor details the bill is the same as the National Pure Food and Drug Law. The Ohio Bill, in one or two instances, requires a higher standard than that provided for in the National Law, hence there has been some slight degree of opposition from the State Food and Dairy Commission.

The bill providing for the creation of a Deputy County Officer of Health is ready for presentation having been favorably passed upon by the State Legislative Committee and House of Delegates.

An amendment to the law on Criminal Abortion, in which the woman concerned is the only individual to be exempt from criminal liability, has been presented. The attorney for the State Association, Judge Kinkead, is very hopeful that this measure will become a law.

The bill, which will provide for the re-establishment of local boards of health for cities, as provided for by the code of 1902 before the 1904 amendment, is the subject of considerable discussion. However, the State Association seemed to favor the amendment.

The Ohio State Medical Association, together with State Board of Registration and Examination, are unfavorable to the creation of a separate board for the examination and registration of nurses. They favor a committee, to be controlled by the State Board of Medical Examination and Registration, on the same basis as that now conducting the examinations for the osteopaths, and that provided for in a bill, which will probably become a law, which provides for the examination and registration of optometrists.

A bill providing for the more complete registration of vital statistics is being fathered by the Secretary of State and will undoubtedly secure his influence toward its passage.

A very interesting bill, which would be a dangerous one should it become a law, is House Bill, No. 704, which provides for the registration of non-medical healers. This bill was introduced by Mr. Elson, of Tuscarawas County, and has been referred to the committee on medical jurisprudence. It is not considered that the bill will be reported.

At a recent meeting of the House of Delegates of the Association an enormous number of bills were considered, many were passed as being unimportant, and many recommended for passage. It is the feeling among the State Committeemen that but little medical legislation will be secured this year, owing to the enormous number of vital corporation laws now before the legislature. It is likely that much beneficial medical legislation will be secured a year hence.

The following amendments to the By-laws were voted upon, and carried. Section 2, Chapter 4, to read: "The annual dues for Active Membership shall be four ($4.00) dollars, the annual dues for non-resident and associate members shall be one ($1.00) dollar. The annual dues shall be payable in advance in January of each year. Active members elected to the Academy after January 31st shall pay as their dues for that year a sum equal to the aggregate of one-twelfth of the annual dues per month for the remainder of the year."

Also paragraph G, Section 4, Chapter 7, to read: "The Council shall authorize the payment of the expenses of the Academy, and annually, in

June, shall direct the Treasurer to pay the Cleveland Medical Library Association, for the current year, twenty-five (25%) percent. of the annual dues received from active members during the preceding year. This sum, however, shall not fall below three hundred ($300) dollars."

W. B. Laffer read a paper on "Acute Dilatation of the Stomach and Arteriomesenteric Ileus" (to appear in full in *Annals of Surgery*). A critical analysis of 217 reported cases, of which 120 were autopsied, was made and from these facts, together with his own observations, the following conclusions were reached:

Acute dilatation of the stomach is very fatal, but it is not as rare as the literature would show it to be; this is shown by the rapid increase of reported cases as the subject becomes better known.

The pathology and modus operandi of acute dilatation of the stomach and gastromesenteric ileus is not definitely known, but the experimental, clinical and pathologic evidence points to a primary innervation disturbance affecting the gastric nerves or their centers.

It has not been proved that the compression of the duodenum by the root of the mesentery is the primary cause of arteriomesenteric ileus.

The diagnosis may usually be readily made by bearing the disease in mind. The presence of distension, the vomiting of large amount of greenish fluid, normal temperature, rapid pulse, great thirst, little abdominal tenderness and collapse point to the trouble being acute dilatation. The passage of the stomach tube will usually establish the diagnosis.

Treatment should consist of repeated gastric lavage, even when the patient seems moribund. No food or drink to be given by mouth, but salt solution transfusions and enemata should be given. Patient to avoid the dorsal decubitus and to assume the knee-chest, abdominal and right lateral position as much as possible.

N. Rosewater opened the discussion and laid stress upon the frequency of this complication following operative procedures. Too early feeding after operation is dangerous; and, therefore, he advised waiting to administer food until the stomach was perfectly settled. N. S. Scott thought the condition very common, but that only extreme cases were recognized. Many follow operations and account for the distress noted after them, examination of the stomach will often show dilatation, and the use of the stomach tube is therefore indicated. Septic cases frequently terminate with an acute dilatation of the stomach, which makes the prognosis very grave. Prognosis of all cases is not necessarily grave, but it is in the severe ones. Gastroenterostomy should be performed in cases of chronic dilatation to put the digestive system in the best condition and so avoid the liability to typhoid and other bacterial infections. He did not think that the gastric distress, after operation, was caused by dilatation due to early feeding as the symptoms often occurred before food is given; as soon as food can be taken it is a relief to the patient and he thinks small quantities of food are advisable as soon as possible. F. E. Bunts referred to a case he saw in a healthy man following a hearty meal, and another case which occurred after delivery. He has had no death after operation from this cause that he can recall. If postoperative vomiting is persistent he always uses a tube. He has not observed acute dilatation in sepsis, if it has been present. He also thought that small quantities of food, as soon after operation as possible, give relief from the usual gastric distress. He believes that dilatation after operation occurs usually before feeding has been begun. L. W. Ladd also discussed the paper.

H. S. Mathewson read a paper on "Duration of Disability and Injury in Disease." (To appear in full in the JOURNAL). F. E. Bunts opened the discussion by insisting on the necessity of warning a patient as to the period of disability, especially in fractures. The patient may be up and around long before he may be able to do his usual work. If all cases were followed up and standard statistics made we would have a very different idea as to the period of disability in many diseases and after injuries.

D. S. Hanson read a paper on "Longevity in its Relation to Preventable Causes of Death." (To appear in full in the JOURNAL).

CLINICAL AND PATHOLOGICAL SECTION

The forty-seventh regular meeting was held Friday, January 3, 1908, at the Cleveland Medical Library, W. G. Stern in the chair.

F. E. Bunts presented a young girl with the radius of her right arm 2½ inches shorter than that of the other arm, and the ulna ¾ inch shorter than the other ulna. As a result of the disproportion between the lengths of the two bones the hand was held to one side. This condition followed an injury to the epiphyseal cartilage which caused the growth of the radius to be interrupted. An X-ray plate illustrating the condition was shown. He also showed a radiograph of a girl's shoulder which he said seemed from an ordinary examination to be dislocated, but which was, however, a fracture of the neck and dislocation of the head of the humerus.

W. H. Humiston showed a specimen of a ruptured tubal pregnancy. He described a case in which pulmonary embolism followed an unsuccessful attempt at delivery of a child by high forceps and successful delivery by version, and another case in which an 18 year old colored girl was supposed to have had a miscarriage. A mass could be palpated in the vagina which was shown by examination through a speculum to be an onion. It was removed without difficulty. The patient was unable to say how it happened to be where it was, and denied all knowledge of it.

J. G. Spenzer described a case of abdominal abscess following a ruptured appendix. The persistent postoperative sinus finally closed after employing injections of formalin.

The regular program was as follows: F. S. Clark read a paper "Report of a Case of Vaginal Cesarean Section for Acute Cardiac Dilatation and Pulmonary Edema" (appearing in full on page 80). The paper was discussed by H. B. Ormsby, and closed by F. S. Clark, who said that he believed that any pregnancy should be interrupted when there was a history of a previous failure of cardiac compensation.

H. O. Feiss read a paper "Notes on Club-foot with Special Reference to Treatment" (appearing in full on page 84). In the discussion G. I. Baumann said that there was no case of flat-foot even in adults which could not at least be benefited. S. W. Kelley spoke of the necessity of beginning treatment early, and of the use of tin strips held in place with plaster. W. G. Stern also said that treatment should be begun very early, the foot being manipulated under an anesthetic seven to ten days after birth until perfectly free. In most cases it is necessary to tenotomize the tendo Achillis, afterwards holding the foot in an over-corrected position by means of plaster of Paris.

F. E. Bunts read a paper upon "The Value of Blood Examination in Surgery" (appearing in full on page 75). This paper was discussed by J. P. Sawyer who said, among other things, that he had found that the polymorphonuclear leukocytes were lower in number than normal in people living in Cleveland and vicinity. W. H. Weir said that he had found the eosinophiles to be reduced in pelvic infections of gonorrheal origin, statements to the contrary notwithstanding. In closing, F. E. Bunts said that he thought a low polymorphonuclear leukocyte count was not necessarily a sign of danger.

EXPERIMENTAL MEDICINE SECTION

The thirty-sixth regular meeting of the Section was called to order by Chairman Hamann at 8 P. M., on Friday, January 10, 1908, at the Cleveland Medical Library.

O. T. Schultz reviewed the work of Fritz Schaudinn ("Fritz Schaudinn: A Review of his Work"). Beginning with his Doctor's thesis in 1894 Schaudinn published a number of papers of great importance, not only to general biology, but also to protozoology as applied to scientific medicine. The earlier publications dealt more particularly with the finer nuclear changes occurring in direct and indirect nuclear division. The work upon the life cycles of a number of protozoa broadened our knowledge of the biology of these organisms and changed our ideas in regard to their zoologic classification.

The value of Schaudinn's biologic training to medical research was early recognized by the German Government and in 1901 he was sent to Rovigno by the kaiserliche Gesundheitsamte. There followed a number of papers of direct benefit to medicine. Among these was one dealing with the parasite of malaria. The entrance of the parasite into the human red corpuscle was observed, and the causation of the relapse by the parthenogenetic division of macrogametocytes was established. Another described the differences between Entamoeba histolytica, the pathogenic intestinal amoeba, and Entamoeba coli, the non-pathogenic form. Self-fertilization was shown to occur in the latter organism.

Observations upon Bacillus bütschlii and Bacillus sporonema, published in 1902 and 1903, increased our knowledge of the structure of the Bacteriaceæ and established the occurrence of a primitive sexual act in the reproduction of the former.

In 1904 Schaudinn returned to Berlin as the head of the newly established division for protozoology in the kaiserliche Gesundheitsamte. There followed two publications of direct practical value. These were the confirmation, by experimental work upon monkeys, of Looss' observations that the larvae of Ankylostomum duodenale may penetrate the normal skin and give rise to an intestinal infection; and a record of the success obtained in attempting to free the village of St. Michele-di-Leme of malaria by the prophylactic use of quinin.

Work upon the blood parasites of the owl, published in 1904, established the close relationship of Halteridium noctuae and Trypanosoma noctuae, revolutionized our ideas of the classification of the protozoa, traced the development of the blepharoplast and of the motor apparatus from the nucleus and showed that nuclear dualism is not limited to the Infusoria but is probably common to all protozoa.

Early in 1905 Schaudinn, in association with Hoffman, noted the occurrence of a characteristic organism, Spirochaeta pallida, in certain of the lesions of syphilis. Later work during this year dealt with the morphologic characteristics of several species of spirochaetae, presented observations in favor of the protozoan nature of this group of organisms and showed that Spirochaeta pallida differs enough from the true spirochaetae to warrant the establishment of a new genus, Treponema, for the syphilis parasite.

One paper of 1905 is extremely important because of its theoretical consideration of the process of fertilization. Schaudinn postulates nuclear dualism as a condition common to all cells and considers fertilization to be a process whose purpose is the equalizing of the antagonistic somatic and animal nuclear properties. Without this attempt at establishing a balance, that is, without fertilization, cell death is inevitable.

In 1906 Schaudinn was called to Hamburg to organize a division for protozoology in the Institut für Schiffs- und Tropenhygiene. This post was one that promised to give to medical research many advances as the result of Schaudinn's genius. His death, on June 22, 1906, robbed scientific medicine of its most brilliant exponent.

J. J. R. Macleod's paper, A Brief Survey of the Development of Physiologic Knowledge from the Time of the Reformation to the Beginning of the Nineteenth Century, will be published in full in the JOURNAL.

THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The thirty-second regular meeting was held Friday, January 24, 1908, at the Cleveland Medical Library, A. R. Baker in the chair.

S. H. Large presented a Case of Facial Paralysis in which an Anastomosis was made between the Facial and Hypoglossal Nerves. The case was that of a young man who developed a facial paralysis following a chronic suppurative otitis media. Six months after the onset of paralysis, Dr Beck, of Chicago, operated, attempting to perfect anastomosis between the hypoglossal and facial nerves. There has been no improvement in the paralysis and the case was presented for suggestions as to what might be done. The operation consisted in setting the facial in the hypoglossal nerve.

J. M. Ingersoll read a paper on Intracranial Infection due to Diseases of the Accessory Sinuses of the Nose. The general trend of the discussion, by J. N. Lenker, W. B. Chamberlin, J. E. Cogan and A. R. Baker, was that it is surprising how few complications of the brain occur through infections of any of the sinuses, especially when one considers the lymphatic arrangement of the nose and its accessory cavities. The Guy's Hospital reports show very few such complications. S. H. Large remarked that now that there is more grippe prevalent, there are more infections of the accessory cavities.

W. E. Bruner reported a Case of Mucocele of the Orbit. The patient, a female, aged 27, had trouble with the left eye for 10 months before being seen. Eye very painful and much headache. Swelling at inner upper side of left orbit just beneath brow, no redness; tumor seen and felt extending outward; adherent to inner and upper wall and extending down to canthus. Eye pushed downward, outward and forward. The swelling had been opened six weeks before and a small amount of matter had came out, but the sac had again refilled. At operation an incision was made over the sac, and the tumor opened. There exuded a quantity of heavy tenacious fluid. The cavity extended backward and inward into the ethmoid, and, on probing, it could be felt to extend well beyond the median line. Drainage was with gauze, and so far as known there has been no recurrence. An examination of the nose was later made by S. H. Monson, who reports two or three polyps at the middle turbinate but no fluid and there is no apparent connection between them and the mucocele. In discussing the case D. B. Smith said that he saw the case originally, opened the sac, cleansed and irrigated it with bichlorid. He also reported having seen three similar cases in which with this method of treatment there had been no recurrence.

M. Metzenbaum exhibited a middle turbinate body in which the entire turbinate had been removed in an attempt to remove a portion. He expected as an after effect a large area of atrophy but instead the space has now become filled by the inferior turbinate which formerly had been much compressed.

J. E. Cogan read a paper entitled "A Criticism of some of the Methods Used in Diagnosing Functional Muscle Disturbances with a Demonstration of New Apparatus." The paper consisted principally in a demonstration of a new apparatus for the determination of functional muscle errors. The apparatus will undoubtedly be discussed at length by the writer later. By it he is enabled to determine errors of muscle conditions in each eye separately.

The following are applicants for membership: Helen Hempstead, Joseph Jacobs, Ernest H. Cox, Benj. C. Barnard, Jacob Silberman, Clyde Cummer, Jacob L. Bubis. Non-resident membership: H. E. Welsh, Youngstown, O., A. B. Smith, Wellington, O.

All names of applicants are published for the purpose of allowing any member to send written objections to the Council of the Academy, stating why such applicant should not be elected.

The following contributions have been made to the Legislative Fund of the Academy of Medicine.

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Book Reviews

A Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Eighth Revised Edition. Octavo of 1317 pages, fully illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, $5.50 net; Half Morocco, $7.00 net.

This appears to be one of the best of the single volume text-books, more especially useful for students. The classification is good, and most of the articles are well proportioned, but the advanced practitioner is in many cases doomed to disappointment because many of the subjects are fragmentary and not exhaustive as must necessarily be the case in a single volume treatise. The various differential diagnosis tables are a prominent feature and particularly useful to refresh the memory in hastily looking up a special subject.

The chapter devoted to Animal Parasites occupies 77 pages and shows the most recent advances. Syphilis occupies its new place under this head. To the graduate of over 10 years, this chapter is instructive if he has not kept strictly up in his reading.

One may observe occasional omissions, and is surprised not to find any mention of the serum treatment for cerebrospinal meningitis.

The book is well bound and the typography excellent, but is marred somewhat by the quality of the paper, which is not sufficiently thick or opaque to prevent the reverse impression from showing through. The illustrations are few and exceedingly crude and poor. The several inserted plates, however, are very good.

In these days of multiplicity of text-books a volume has indeed to be excellent to secure universal sale, and if the practitioner has one of the latest editions of a well recognized text-book on medicine others along the same line are practically duplicates.

A Text-Book of the Practice of Medicine for Students and Practitioners, by James Magoffin French, A. M., M. D., formerly Lecturer on the Theory and Practice of Medicine, Medical College of Ohio. Third, Revised Edition. Illustrated by one hundred and ten engravings in the text and twenty-five full-page plates in tints and colors. New York: William Wood & Company. 1907.

This is a comprehensive treatise on medicine and reflects credit on the author in having thoroughly acquainted himself with the entire subject in detail.

The work is well balanced and gives the reader the benefit of practically everything valuable that has been contributed to medical science.

Part 1: Principles of Medicine is an interesting and valuable discussion on subjects not to be found in the ordinary text. The history of infectious diseases briefly given before the discussion of each disease is a feature worthy of commendation.

In making up the completeness of the text such conditions as auto-intoxication, Vincents angina, etc., are discussed, which is not true of some others of our modern texts on medicine. If we were to express adverse criticism it would be on account of lack of attractiveness in the print, making it uninviting to the reader. It is well illustrated, but the illustrations lack originality. A few errors are to be found, *e. g.,* under gastric analysis total free HCl. is given from 40 to 60, which is wrong.

On the whole the book appeals to us as a careful compilation of everything valuable that has been worked out in medicine and as a careful guide to the student and practitioner.

Annual Report of the Board of Regents of the Smithsonian Institution, for the year ending June 30, 1906. Government Printing Office, Washington, 1907.

The annual report of the Smithsonian Institute is always of interest to those engaged in any kind of scientific investigation. The various articles constituting the appendix of this volume cover a wide range of scientific subjects and represent the latest advances in our knowledge of their respective subjects. Of special value to medical men are the papers by Raphael Blanchard upon "Zoology and Medicine"; that by E. Bugnion, being a resume of the researches of P. Marchal upon "Polyembryony and the Determination of Sex"; and that by L. Cuénot upon "Heredity." Madame Curie's article on "Modern Theories of Electricity and Matter," and Franz Himstedt's upon "Radioactivity" also offer attractive topics. A number of other papers upon geology, astronomy, history, chemistry, etc., are also given. The activities of the Smithsonian Institute are well known and its publications have long been a source of satisfaction to the correspondents of the Institution.

Cosmetic Surgery. The correction of featural imperfections. By Charles C. Miller, M. D. Including the description of a variety of operations for improving the appearance of the face. 136 pages. 73 illustrations. Prepaid, $1.50. Published by the Author, 70 State St., Chicago, Ill.

The author draws attention to the fact that there is a constantly increasing demand on the part of the public for surgical measures to correct featural imperfections. The surgeon should give this matter due attention as it is certainly more his province than that of the irregulars whose lack of proper technic and experience is apt to prove disastrous. Many of the procedures described are for such deformities as undoubtedly call for treatment, such as the reconstruction of a new ear after the total loss of the original, the removal of keloids, the relief of nasal stenoses, etc. Others such, as the modification of the nasolabial line, the inversion or eversion of the lips, etc., do not appeal to one so strongly as being really necessary measures and yet they are often demanded. The book is abundantly illustrated and will fill a distinct place in the realm of surgery.

Diseases of the Intestines and Peritoneum. By Dr Herrmann Nothnagel, of Vienna. Edited, with additions, by H. D. Rolleston, M. D., F. R. C. P., Physician to St. George's Hospital, London, England. Second Edition. Octavo of 1059 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, $5.00 net; Half Morocco, $6.00 net.

This extensive volume of over 1000 pages will form a valuable work of reference, not only for those who are especially interested in the diseases referred to in the text, but also for the general practitioner. This second edition has been brought thoroughly up to date by the numerous additions made by Dr Rolleston. In many cases these additions are more valuable than the original text, especially as they contain many important references to French, English and American as well as to German literature. Full consideration of the work done in the former countries was, to a certain extent, neglected in the original text.

The first chapter on "The Chemic Processes that Occur in the Intestine" is written by Fritz. Obermayer; the second chapter on the "Bacteria of the Intestine" is written by Julius Mannaberg. These are very complete.

Distributed through the book are 20 plates illustrating normal and abnormal peristalsis of the intestine. In the chapter on "The Movements of the Intestine" the recent valuable work of Starling in England and Cannon in this country has been given due prominence.

The section on "Stenosis and Occlusion of the Intestines" deals exhaustively with the topic. Mr. D'Arcy Power, who has done so much interesting work on Intussusception, has made numerous additions to the chapter on this subject.

Throughout the book full consideration is given to the treatment of each disease. At the end of the book there is an extensive bibliography of 25 pages. When additions have been made by the translator, references to these are given at the foot of each page.

Acknowledgements

Proceedings of the Pathological Society of Philadelphia.

Monthly Bulletin, New York State Department of Health.

The Principles and Practice of Modern Otology, Jno. F. Barnhill and Ernest de W. Wales. W. B. Saunders Co., Philadelphia.

Influence of Food Preservatives and Artificial Colors on Digestion and Health, by H. W. Wiley, M. D.

Blastomycosis and Its Congeners: Report of Eight Cases Observed by the Writer in Indiana, Alembert W. Brayton, A. M., M. D.

Transactions of the Fifth Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine Hospital Service.

Syphilis, Past and Present: Its Birth and Origin: Literature, Symptomatology and Curability: Its Relation to Marriage: Innocent Syphilis and Social Prophylaxis, Nelson D. Brayton, A. B., M. D., Government Physician to the Isthmian Canal Commission.

Correspondence

January 10, 1908.

EDITOR CLEVELAND MEDICAL JOURNAL:

Dear Doctor—There is at present in this neighborhood a pronounced epidemic of Influenza (I think Influenza a better name than "La Grippe") but with a low fatality. It is interesting, from the point of view of Epidemiology, to ascertain if this be generally diffused. From the historical point of view it is a fact that a wide spread mild influenza epidemic has nearly always, perhaps always, been the precursor of a more malignant epidemic of some form in the following fall. I do not connect them as cause and effect, but if the fact is universal they point to some common cause.

Will you invite the profession to report to you their experience as to the prevalence of Influenza, and communications thereon to the undersigned will be highly appreciated by Yours very respectfully,

M. R. LEVERSON, M. D.
927 Grant Ave., Bronx, N. Y.

TO THE MEDICAL PROFESSION.

Gentlemen—The Government and the people of the Republic of Guatemala, as well as the National Committee of the Fifth Pan American Medical Congress, are actively endeavoring to do all in their power, in a sure and efficient way, to make this meeting a great success.

With this object in view the Committee will be pleased to invite you personally to attend, as well as the members of the Society or Medical Fraternity to which you belong, in order that through your presence and works the certain success of the Congress, that science expects of its representatives, will be assured.

The Committee hopes that you and the other members of your institutions will meet at Guatemala on August 5 to 10, 1908, and sincerely begs that from now on you will not hesitate to keep yourself in fraternal relations with this Committee, and also that you will let us know beforehand if you intend to attend the Congress in person or to send scientific contributions.

The Committee hopes to receive a reply shortly to the invitation to this meeting, which should serve as an incentive to unite professional interests, to stimulate the advance of the medical science and to contribute to the preservation of the health and the prolongation of the life of the People of the Americas.

We take advantage of this opportunity to express to you the best regards of

Yours very truly,

JOSE AZURDIA, Secy. JUAN J. ARTEAGA, Pres.

January 3, 1908.

EDITOR CLEVELAND MEDICAL JOURNAL:

Will you kindly insert the following in your JOURNAL giving it as prominent a place as possible?

The writer desires information regarding any alleged recoveries or cures of inoperable or recurrent carcinoma of the mammary gland.

If any case or cases are known to anyone who reads this circular, and can be authenticated by facts as to the history and condition prior to recovery and the length of time which has elapsed since recovery, such information will be much appreciated and duly acknowledged.

Any well-authenticated reports of recoveries from carcinoma located in other parts than the mammary gland will be welcomed.

Cancer paste cures, X-ray cures, radium cures, or cures as result of surgical operation are not wanted.

Hearsay cases are not wanted unless accompanied by name and address of person who may give knowledge first hand.

Address, HORACE PACKARD, 470 Commonwealth Ave., Boston, Mass.

Medical News

D. K. Gotwald, of Springfield, is in Mexico for a month.

W. E. Allyn, of Chardon, is recovering from a sprained ankle.

J. W. Millette and wife, of Dayton, recently made a three weeks' visit in Chicago.

J. H. Lowman, of this city, who has been rather seriously ill, is reported as satisfactorily convalescent.

Herman S. Rhu, of Marion, has gone to San Angelo, Texas, where he will remain the balance of the winter.

Dwight Strickland, of Niles, is able to be out again, and has gone to Florida to remain until the warm season.

A. Per Lee Pease, of Massillon, recently set sail for England, on the first stage of his proposed journey to South America.

John H. Quayle and **Thos. H. George** have removed their offices from the Rose Building to the Kingmore Building, 1110 Euclid Avenue.

H. H. Hessler, formerly of the H. H. Hessler Company, has located at 150 the Arcade until February 1, when he will occupy store room No. 36 on Superior Street level.

Robert Pollock, of this city, owing to ill health, has resigned the chair of Materia Medica at the Cleveland College of Physicians and Surgeons. C. Lee Graber succeeds him in this position.

H. W. Rogers, the newly-elected President of the Academy of Medicine of Cleveland, underwent an operation for appendicitis, at Lakeside Hospital, on January 15. He has made a very satisfactory recovery.

The Lake County Medical Society elected the following officers for 1908: President, T. M. Moore; Vice-President, C. F. House; Secretary, C. M. Hawley; Treasurer, M. H. Carmady; Delegate, H. G. Sherman; Auxiliary Committee, C. F. House.

The Sisters of Charity Hospital entertained the Staff and Alumni Association of the Hospital at a banquet early in January at the Hospital. J. E. Cook was elected President of the Alumni Association, and J. S. Tierney, Secretary. About 40 members were present.

It is reported that Cleveland physicians are being canvassed to learn their attitude upon the Local Option Bill. Those opposed to it have been asked to send protests to their Representatives at Columbus, using the argument that they need alcoholic liquors in the treatment of their patients.

The January meeting of the Charity Hospital Medical Society was held Wednesday, January 8, 1908. Program: "Ruptured Urinary Bladder, following Forceps Delivery," R. A. Bolt; "Gunshot Wound of Spinal Cord," E. A. Houck; "Report of Three Cases of Ectopic Pregnancy," C. J. Probeck.

The Dispensary service of the Cleveland General Hospital has recently been removed to the building of the College of Physicians and Surgeons. As soon as the new St. Luke's Hospital on Carnegie Avenue is completed the Cleveland General Hospital will be closed and the new hospital occupied.

The Lakeside Hospital Alumni Association held its annual meeting and banquet on Wednesday evening, January 15, 1908. The following officers were elected for the coming year: President, J. H. McHenry; Vice-President, J. Phillips; Secretary-Treasurer, A. Eisenbrey; Member of the Executive Committee, H. L. Sanford.

The Association of Medical Colleges will meet at the Cleveland Medical Library on March 16, 17, 1908. The purpose of the Association is to maintain the standard of medical education. Sixty-three Medical Colleges of the United States are represented. H. P. Ward, of the University of Milwaukee, is President, and F. C. Zapffe, 1764 Lexington St., Chicago, is Secretary.

Ohio Medical Teachers' Association.—The third annual meeting was held in the afternoon and evening of December 27, at the Hartman Hotel, Columbus, O., and was the most successful in the history of the organization. About 75 members were present besides a number of visitors, among them the Presidents of several literary colleges of the State. The entire program was carried with two exceptions. Interest in the organization has increased and its members feel that much good has been accomplished.

Training in Medical Organization.—The students of the University of Pennsylvania Medical School have formed an organization, the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is very closely modeled. The various student societies take the place of the State organizations and elect members to a House of Delegates, which transacts all the business of the association. An annual meeting is held, at which papers are read by chosen members, thus encouraging original research and a scientific spirit. The organization is named The Undergraduate Medical Association of the University of Pennsylvania, and already has over 250 members.

In connection with the coming fifth Pan-American Medical Congress, it must not be thought that Guatemala is an undesirable place to visit in August, and that it will be very hot and the rain constant. August is the time of the year called the cunicula when, although hot, there is but little rain. The heat of Guatemala does not, however, compare with the heat of our own States, as it is situated on a plateau which is comparatively cool. The trip down from New Orleans, or from New York, by steamer to Porto Barrios is an agreeable one. The trip to the Congress and back will be in the hands of the Chairman of the Transportation Committee. Excursions can also be made in connection with this Congress to Mexico or the various West Indian Islands. These excursions will be in the hands of Thomas Cook & Co., or anyone who chooses to organize one. There will be no charge for transportation in the Republic of Guatemala.

Deaths

Rodney Trimble died at his home in New Vienna on January 3, of cancer of the stomach.

The Cleveland
Medical Journal

Vol VII March, 1908 No 3

A Brief Survey of the Development of Physiological Knowledge from the Time of the Reformation to the Beginning of the Nineteenth Century

By J. J. R. MACLEOD, M. B., D. P. H.

The practice of medicine of the ancients as handed down to us in the writings of Hippocrates, Aristotle, Celsus and others, is of very little interest to the average physician of today. The therapeutics of these great old-time philosophers was so entirely different from that of the men of today, that it is difficult, aye usually impossible, to trace any semblance between the two; and in regard to a knowledge of the normal functions, or physiology, of the animal body, we can find in their teachings very little that even approaches the truth, as we now know it.

On the other hand, the material advance in all parts of medical knowledge during the nineteenth century has been so great as to give many the impression that the history of medicine extends only so far back as this. It is often forgotten that during the centuries immediately preceding the nineteenth, a slower but no less certain development of knowledge was taking place, in preparation, as it were, for the remarkable advancement during this century. The brilliancy of the flame of discovery in the nineteenth century so dazzles our eyes, that we often fail to see behind it the more slowly burning fires of the preceding centuries.

No observing student of medicine can but be impressed by the remarkable evolution in his science which is taking place in our own day; an evolution from empiricism to reason, from mere chance medication to rational therapeutics, from guess-work to scientific diagnosis. He rightly bestows great honor on the men who assist, by their researches, in this advancement, but, in so

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Read before the Section of Experimental Medicine of the Academy of Medicine of Cleveland, January 10, 1908 doing, he too often forgets to pay due honor to those who in bygone days have made this advancement possible: who were the pioneers that marked out the trail which is now being developed into the well built highway of medical knowledge.

This gradual displacement of chance by reason in the practice of the physician dates from the development of the sciences of anatomy and physiology. Before there existed even a fragmentary knowledge of the structure and function of the human frame, there could be little hope of understanding in what way a disease or injury should be treated, for the only remedy which could be prescribed was that which previously in similar cases had, by chance, been found efficacious. Empiricism, coupled frequently with superstition, was the guiding star for therapeutics. When a watch goes out of order it may sometimes be set going again by tampering with it. To apply such treatment, no knowledge of the structure of the watch is necessary, but only occasionally will it prove successful. On the other hand, a skilled watchmaker will invariably be able to repair the damaged timekeeper, for he knows its structure and he understands exactly what is interfering with its proper working. So is it in the case of medicine, the ancient physician was like the amateur watch repairer, he knew nothing of the structure of the complicated human frame, and when called upon to treat some defect in its mechanism he could only apply some chance remedy and trust to luck. But the modern physician knows much—by no means all—of the normal makeup of his patient and he can, not infrequently, diagnose what is exactly out of working order and prescribe a treatment which will, with reasonable certainty, set things right again.

It is evident then that the history of medicine must center around the development of anatomical and physiological knowledge. Modern medicine owes practically nothing to the ancients and, therefore, in considering its history, our first studies must of necessity be directed exclusively to tracing the birth and following the growth of anatomy and physiology, for the history of anatomy and physiology is essentially the history of scientific medicine.

It is the intention of the writer in the following paper to outline briefly the history of anatomy and physiology up to the beginning of the nineteenth century, by which date we may consider these sciences to have become firmly established. In a future paper, the further developments during the nineteenth century will be discussed and then we shall retrace our steps and consider in some greater detail the biographies of some of the great men to whom this history owes so much.

In these papers no claim is made of originality in historical research, their object being merely to present in brief form to the busy practitioner an outline history of his great profession. The sources of information used will be mentioned in their proper places, partly in acknowledgement and partly to enable more extended study by any who may be anxious to pursue the subject further.

A study of the advance in scientific knowledge as culled from the writings of the old masters cannot fail to impress one with anything more forcibly than with the fact that every step of progress is followed by one of retreat. Like the advancing tide, there is no steady rising of the sea of knowledge but each wave rises only so far and then recedes, to return again later perhaps farther, perhaps no farther than its predecessor; but yet the tide surely creeps up. If the writings of one old master be compared with those of his immediate predecessor most certain evidence can often be gained of a great advance in knowledge: whereas, in the next generation to him, the writings show us a falling back again to the old level. The wave of knowledge has receded and it may not rise again for centuries until there appears some other master using new methods of investigation and tearing himself loose from old systems of thought.

Scientific knowledge, in other words, advances by epochs, and its great men are those who mark the epochs.

In our historic outline we shall attempt to keep this point of view constantly before us by briefly outlining and explaining the teachings of the various epochs in one or other of the subdivisions of the subject.

From the time of Galen (second century of the Christian Era) until that of the Reformation, the history of medicine is a blank page. During all this period, the Roman priest was practically the only educated man, and for his medical knowledge the authority of Galen was all that he desired. The education of these priests entirely unsuited them for any other thing than to believe implicitly whatever was handed down to them by authority. No system of education could have been better adapted to unfit them as observers of nature. They believed that Galen was infallible and should they, by actual observation of nature, find that in some particular Galen did not describe what they themselves saw, they would the rather discredit their own observations than question the authority of Galen. Such methods of authority had proved so successful in the search after things spiritual that no one for a moment doubted but that in every branch of learning similar methods would lead to the same result,—the glorification, first of all of the priests and secondarily of God. With the growth of the Christian Church, authority became more and more the only means by which knowledge could be acquired and consequently the method of original research came to be less and less practiced in the pursuit of natural knowledge. Among the teachings of Galen were, of course, some correct enough anatomical facts, but in general the descriptions were crude and inaccurate, and when the functions of the various parts of the animal body were considered we can find practically nothing in any way near the truth. And yet Galen's teaching was much in advance of that of his predecessors. Aristotle had taught that the heat of the body is produced in the heart and that the respirations are intended mainly to cool or temper this heat, being also necessary, however, to supply the "pneuma," a something required for life. Praxagoras went even farther off the trail and was father to the idea, which prevailed for many centuries, that the arteries are filled, not with blood, but with the pneuma absorbed from the lungs. According to him, the veins alone contain blood. Galen set matters somewhat aright by showing that both arteries and veins are filled with blood, but much farther than this he dared not go being still convinced that the chief functions of the respirations is to furnish pneuma to the heart. For over fifteen hundred years Galen's doctrine held undisputed sway in the world of letters, although it all sounds to us now as nothing more than the fabrications of an extravagant imagination curiously intermingled with religious superstition.

Galen's account of the circulation of the blood and of the functions of the heart may serve as an example of this old time physiology. Briefly this is as follows: The food absorbed from the intestines is carried in the mesenteric vessels to the liver where it is converted into "crude blood" by having "natural spirits" conferred on it. The crude blood then travels to the right heart where some of it passes through invisible pores in the septum to enter the left ventricle. This portion in the left ventricle comes in contact with air which, by the expansion of the heart, is aspirated thither from the lungs through the vein-like arteries (pulmonary veins). This air with the help of the "innate heat of the heart," which is the source of the heat of the whole body and which was placed in the left heart by God at the beginning of life, causes the blood in the left ventricle to become endowed with further properties called "vital spirits" which fit it for the performance of the vital functions. The air in the left ventricle serves also to cool down the innate heat of the heart. From the two sides of the heart, the crude blood and the blood endowed with vital spirits ebbs and flows along the great vessels, the former (venous) blood serving the lower stages of nutrition and the latter (arterial) giving power to the tissues to fulfil their vital functions. The blood containing vital spirits which reaches the brain is there used to produce "animal spirits" which are transmitted through the various nerves to all parts of the body. The blood ebbing and flowing along the pulmonary artery (artery-like vein) serves merely to nurture the lungs, as it would any other organ, and that ebbing and flowing along the pulmonary veins (vein-like artery) carries with it not only the air from the lungs to the heart, but also "fuliginous vapors" from the heart to the lungs, generated as byproducts in the fermenting activities of the left ventricle.

During all the centuries, from the second to the fifteenth of the Christian Era, such was believed to be the physiology of the circulation of the blood. Galen had taught this and Galen must be right. It did not matter whether facts were observed which stood in contradiction with Galen's teachings; the facts must the rather be exceptional than that Galen could err.

There was only one writer who essayed during all this time to record any original anatomical observations. This was Mundinus of the University of Bologna who, in 1315, wrote a book entitled "Anatomia Mundini." This book was widely used as a textbook in the medical schools, but did not enlist any disciples to prosecute further the anatomical researches recorded in it.

The result of this implicit belief in Galen on the practice of medicine could only be to stifle all attempts at rationalism, and it was not until the rising sun of the Reformation had cleared away the heavy mists of authority that any broader views could be obtained of the unexplored regions of natural knowledge.

It was in the last years of Luther's lifetime that modern scientific medicine had its birth. In the year 1543 the great anatomist, Andreas Vesalius, published his work entitled "Fabrica

Humani Corporis," in which, regardless of what Galen might say, he boldly described what he had actually seen by dissection of the structures of the human body. A Belgian by birth and educated in Paris, Vesalius at the age of twenty-one was appointed Professor of Surgery and Anatomy in the growing University of Padua. Unlike his predecessors, he did not employ barbers to dissect for him, but did this with his own hands, for he soon realized that careful dissection is necessary to lay bare the structure of the human frame. He answered arguments by demonstrating on the cadaver, and soon he convinced his hearers that the pursuit of anatomical knowledge could only take place along practical lines, and not by reading Galen. The backbone of authority had been broken, and Vesalius' book created a furor of opposition, not only from ecclesiastical quarters but from all sides of the learned world. Indeed, the opposition to it became so bitter that in a year after the publication of his great work, Vesalius accepted the post of Court Physician to Charles V, and thus, before he was thirty years of age, abandoned the glorious path he had hitherto so successfully traveled. Even some of his pupils turned against him, although fortunately his immediate successor at Padua, Fallopius, was not included in their number; and when nearly sixty years after the publication of the Fabrica, William Harvey attended the anatomical lectures at Padua (1598-1602), the then Professor being Fabricus, he heard much more of the teachings of Galen than of those of Vesalius.

Like the ocean, the wave of knowledge had by the work of Vesalius reached a high-water mark only to recede again until the impelling force of the tide drove on another wave to overreach its predecessor. This second wave in the progress of medical knowledge was the discovery of the circulation of the blood by Harvey. Bold though he was in defying the authority of Galen and appealing to actual observations as stronger evidence of truth than this ancient authority, Vesalius was too fearful of giving his critics good ground for argument, that he dared embody in his work any speculative hypotheses of the functions of the various organs; and, although in the last chapter of his book he describes several physiological experiments, under the title "Some Remarks on the Vivisection of Animals," yet it can scarcely be claimed for him that he was the father of modern physiology. Indeed I believe that this honor must be given to William Harvey, not perhaps because he discovered the greatest number of actual physiological facts, as that he showed by what process of argument and experiment such facts could be discovered.

Harvey received his preliminary medical education at Cambridge, England, and in 1598 went to the then celebrated University of Padua. At that time there were four universities in Northern Italy: Bologna, Padua, Pisa and Pavia. To Padua went most of the English and Scottish students* for it was the University town of the great commercial city of Venice and hence enjoyed much more religious tolerance than did its fellows, these being under the absolute rule of the Roman Church.

But other considerations influenced Harvey in his choice. It was in Padua that the famous Vesalius had lectured and it was here that his successor Fabricus of Aquapendente now taught. It must be considered as perhaps the happiest incident in Harvey's early career that he made so fortunate a choice of a master, for Fabricus seems to have embodied all that is noble in character and to have been a profound scholar. His contributions to physiological knowledge were not great, although in 1603 he published some observations on the valves of the veins, "De Venarium Ostiolis," in which he explained their function as being to prevent the blood from flowing into the small out of the large veins with too great force. He believed with Galen, that blood flowed from the heart to the periphery in the veins, and he thought that the valves served to retard the flow.

Such, incidentally, were the most enlightened doctrines of the circulation of the blood when Harvey attended as a student, at Padua. It was with beliefs of this nature that he returned to London where some years later (in 1616), as Lumleian Lecturer in Surgery of the College of Physicians, he first described correctly the circulation of the blood. The matured account, supported by well considered experimental proof, was published in 1621, "Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus." It is difficult for us to imagine now what a really great work this of Harvey's was, and I cannot, in this brief survey, attempt to plead its worth. One of its chief claims to greatness lies in its method of exposition; to quote Sir Michael Foster, "His wonderful book is one sustained and condensed argument founded not on general principles and analogies but on the results of repeated frequent appeals to vivisection and ocular inspection."

Harvey's book was published in Frankfort where it was brought before the eyes of the learned world at the annual book fair in that city. Its doctrines spread like wild-fire and long before Harvey's death, in 1667, they were taught in most of the schools of medicine. Harvey, moreover, in his continental travels was accustomed to visit the schools and demonstrate his experiments, thus converting the sceptical and convincing all others. Some there were, however, who refused to be torn from the old doctrines. Such an one was Caspar Hoffman of Nüremberg who wrote of Harvey that "He impeached and condemned nature as full of error, and that he had imputed to her the character of a most clumsy and inefficient artificer, in suffering the blood to become recurdescent and making it return again and again to the heart in order to be reconcocted, only to grow effete again in the arterial system; thus uselessly spoiling the perfectly made blood merely to find her something to do."

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*Indeed, there were so many Scotch and English in Padua that a special "nation" existed for them. Unlike the Universities of Paris, Oxford and Cambridge, the Italian seats of learning were what were known as student universities, that is, they were governed by the under graduates not by the masters. For purposes of government, the students were enrolled according to their nationality into nations, each of which elected one or more Conciliarii who formed with the Rectors the executive of the university.

Harvey had sown the seed of experimental inquiry in the study of animal function and at the time of his death the seedling had already grown into a healthy young plant. The old-time practice of inferring physiological function from a study of structure alone came gradually to be replaced by more logical methods of research. And yet this new method, this seedling planted by Harvey, could not have taken root nor could it have matured had it been planted on unprepared soil. A knowledge of structure necessarily precedes a knowledge of function; the one is the prepared soil, the other the seedling. From a knowledge of structure, the possible function may indeed be inferred—an hypothesis formulated—but actual experiment and observation on the living animal are necessary to test this hypothesis and justify its adoption as the truth.

The husbandmen of this new plant of knowledge include many whose names are handed down to us in anatomical nomenclature. The attention of these men was necessarily first of all confined to the acquisition of a knowledge of structure of the various organs and tissues which go to make up the animal body, but many of them were also second Harveys in the sense that they endeavored by experimental inquiry to discover their functions as well. Such men were Leeuwenhoek (Dutch, 1632-1723), Johannes Swammerdam (Dutch, 1637-1680), Aselli (Italian), Wirsung (Bavarian), Glisson (1597-1677), Wharton (English, 1611-1673), Willis (English, 1621-1666), Bellini (Italian, 1643-1703), Stenson (Dane, 1638-1686), De Graaf (1641-1673), and the greatest of all Malpighi (1628-1694).

The discovery of the compound microscope in 1590 greatly assisted many of the workers in their search after anatomical knowledge, its most brilliant application in this direction being by Marcello Malpighi who must, I think, with Vesalius and Harvey, be given an honored place in early physiological history. Born near Bologna and educated at its once famous university, Malpighi afterward became Professor of Medicine there. He was of the same type of man as Harvey and like his English prototype he divided his time between the practice of medicine and biological research. As a physician he must have been held in very high repute, and by his practice of conducting systematic postmortem examinations on his patients and thus endeavoring to get at the cause of disease, he must be considered as one of the founders of systematic pathology. During the winter months his days were probably almost fully occupied with such work, but in summer he retired to seclusion in a country estate where he gave up his entire time to research and writing. It is interesting to point out here that most of his researches were published in the Transactions of the Royal Society of London, which had just been founded and which had invited Malpighi to become a corresponding member. By publishing in this way, he was saved much expense and worry, for publishing was not in those days the easy matter that it is now. It exemplifies the far-sighted policy of the Royal Society to thus encourage such a man as Malpighi.

We must reserve for some future occasion an appreciation of Malpighi's great works. His versatility—for he was at the same time a morphological botanist, comparative anatomist, embryologist and histologist—in no way detracted from the thoroughness and exactness of his work. From the physiologist's point of view his most valuable contributions concern the structure of the glands. For example: he followed up Glisson's description of the course of the large blood-vessels in the liver and showed, by studies in comparative anatomy, that the parenchyma between the vessels, which Glisson had declared to be structureless, is composed of lobules, which he described with great accuracy; he unravelled the complex structure of the kidney, showing that this organ is really composed of a mass of smaller kidneys, each opening by a duct into the pelvis, the ducts being the common endings of the tubules which had been previously described by Bellini and which—Malpighi further showed—became connected in the cortex with tortuous tubules and the corpuscles (glomeruli) which bear his name; he gave a fairly correct description of the spleen, of its trabeculae and lymph nodules; he showed that the white matter of the brain consists of strands of fibers, but, curiously enough, he mistook the grey matter for glandular tissue; he very nearly described aright the capillaries of the pulmonary alveoli; and so on. Malpighi was indeed a great man, although all that he did for medical science will never be known, for much of his manuscript was burned with his Bologna residence in 1684, ten years after which he died in Rome, whither, as Physician to Pope Innocent XII, he had, some time previously, been induced to go.

The descriptions which Malpighi gave of the glands remained practically unchanged until the nineteenth century and much of his success was due to the fact that, before undertaking any investigations, he made himself thoroughly familiar with all that had previously been done; for we must not forget that during the middle of the seventeenth century many contributions of value besides those of Malpighi were published concerning the structure of glands. Malpighi was just the man to piece together these facts and reconstruct them into an intelligible whole.

Meanwhile, in other domains of science great discoveries were being made. Physics and chemistry were opening up new fields of research and it was not long before the truths and methods of these sciences received application in the study of animal functions. The application of physics to physiology was inaugurated by Borelli (born in Naples in 1608) whose results were embodied in a work entitled "De Motu Animalium" and published in 1680, a year after his death. Professor of Mathematics in the Universities of Messina and Pisa, and therefore essentially a physicist, Borelli applied to the study of animal functions and mechanisms the quantitative methods, which in the hands of such men as Galileo and Torricelli had proved of such immense value in the solution of physical problems. For example: to calculate the propulsive power of the heart in systole—for Borelli followed Harvey's teachings of the functions of the heart—he argued that since the bulk of the cardiac muscle equals that of the masseter and temporal muscles combined, its power will be equal to theirs. He ascertained the strength of these muscles by supporting weights on the lower jaw and from his data calculated the working power of the heart. Many of our present conceptions of the physics of the circulation we owe to Borelli, such as the cause of the conversion of the pulsatile flow of blood in the arteries into the continuous flow in the veins. Indeed, with the exception of the work done on hemodynamics by Rev. Stephen Hales (1677-

1761), nothing of essential importance was added to Borelli's brilliant work in this connection until the time of Poiseuille and Weber in the nineteenth century.

The success of Borelli's work led many to believe that in the physical method alone could any advance be made in the knowledge of physiology, and thus it came to be that a school of workers known as the Iatrophysical School sprang up. These men imagined that no physiological function could be described except by the use of mathematical formulae, which they applied promiscuously to everything, and in so doing soon rendered Borelli's method more harmful than useful in the prosecution of physiological research.

The first serious application of chemistry to physiology was by Jean Baptiste van Helmont (1577-1644). About one hundred years previous to the appearance of Helmont's work, however, the seed of chemical physiology and pharmacology had been sown by that remarkable character Paracelsus (1493-1544), the discoverer of the therapeutic uses of laudanum and mercury, and by some claimed to be, rather than Hahnemann, the father of Homeopathy. With practically no chemical knowledge worth mentioning to fall back on, Paracelsus' teachings consisted almost entirely of absurd nonsense about "archaei" or spirits controlling the chemical processes of the animal body. By the disciples of Vesalius he was looked upon as an ignorant charlatan, and yet, from out of all his weird imaginings, enough of truth could be extracted to stimulate Helmont, a century later, to carry on his work. Since the time of Paracelsus, chemical knowledge had considerably progressed so that Helmont's work was of a much less mystic and more scientific nature than that of his predecessor.

But it seemed impossible to dissociate mysticism from chemistry, and throughout Helmont's writings we find a curious mixture of sound chemical knowledge and absurd mystic nonsense. Helmont's teachings were published in a work entitled "Ortus Medicinae" (1648) and the three most important contributions which he made to medical science were, firstly, to show that many problems of the living body are chemical processes and cannot be solved by anatomical or vivisectional methods; secondly, that many processes in the animal body are akin to that by which yeast acts on fruit juice, *i. e.,* fermentation; and thirdly, he discovered carbonic acid gas under the name "gas sylvestre" and showed that all gases are not alike, some of them being inflammable and some, like gas sylvestre (CO_2), being among the products of combustion.

We have seen how the various branches of physiological research were opened up and it remains for us now, in the short time that is left, merely to indicate briefly some of the more important contributions which may be considered as evidences of further advance. We have seen how the seed of physiological knowledge, planted by Harvey in soil prepared by Vesalius and his followers, was tended and cared for by such men as Malpighi, Borelli, Van Helmont, etc., until, by the latter half of the seventeenth century, the seedling had grown into a healthy young plant, requiring now less care, and capable of withstanding some periods of drought. And well this was, since such periods of drought soon came for, although during the latter part of the seventeenth century and during the eighteenth century several important contributions were made to physiological knowledge, yet these were small when compared with those immediately preceding.

Although Italy was the birth place of a great part of modern medicine, yet, for the next century or so, we find that it was in Northern Europe and in Britain that the most rapid growth occurred. Indeed, we may state that from the middle of the seventeenth century to near the end of the eighteenth, all advancement came from the workers in these countries.

In England, about the time of Robert Boyle's remarkable experiments in physics*, that is to say, during the years 1667, 1668, 1669, there appeared three remarkable works embodying respectively the researches of Robert Hooke (1635-1703), John Mayow (1643-1679), and Richard Lower (1631-1690).

Robert Hooke was Curator of the Royal Society, his most important duties being to demonstrate experiments at the meetings of this famous body. Many of these experiments were on the mechanism of respiration, and on the circulation of the blood. John Mayow, a practicing lawyer who studied physiology and chemistry in his spare time, discovered among other things that the atmosphere contains something (which he called "nitro-aereal spirit") necessary both for the life of animals and for the burning of a candle; in other words, he discovered oxygen. His writings, embodied in four tracts, are examples of clear, logical reasoning and careful observation. Richard Lower became famous as being the first to practice the transfusion of blood, besides which he made many accurate experimental observations on the circulation of the blood and on the functions of the lungs.

The work of these men in England was well worthy of the great traditions established by Harvey. It brings to a close the first epoch of startling medical discovery, and to trace the further history of medicine we must turn our eyes to Germany where a class of conscientious and patient workers was gradually growing up; a class of men not unlike those, who in more recent times have made this country so famous in medical development. In chronologic order, the most important of these men are Franciscus Sylvius (1614-1672),† George Ernest Stahl (1660-1734), Herman Boerhaave (1668-1738), and Albrecht von Haller (1708-1777).

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*New Experiments Physio-Chemical (1660).

Sylvius was essentially a collaborator and expositor. Well versed in all the sciences which could have any application in medicine, he made his lectures very popular and stimulating of further thought, and he showed that in applying chemistry to explain physiological phenomena, it was unnecessary, as Helmont had done, to invoke mystic forces such as archaei, etc. He soon attracted many earnest young men to his Laboratorium in the University of Leyden (the first laboratory in the modern sense), where he suggested research problems to them and directed them in their work.

Stahl—for sometime Professor of Medicine in Halle—is famous mainly because he was the founder of the phlogiston theory (which stated that when a substance burned, phlogiston departed from it; it became dephlogistigated), and because of his attempts to explain the difference between living and dead matter. He was the originator of the idea of a vital principle.

Boerhaave filled the same chair of medicine at Leyden which Sylvius had made so famous. And, indeed, he was a man of the same mold, being well versed in all the sciences and interested more in placing already discovered facts in proper order than in contributing new ones himself. His textbook on medicine entitled "Institutiones Medicae" (1708) was the common textbook of the schools for years and will, I doubt not, be known to some of you here. In chemistry, Boerhaave was also a great authority.

Haller was one of Boerhaave's pupils and was for seventeen years a Professor in the University of Göttingen after which he retired to Berne to prosecute his researches and finish his great book "Elementa Physiologiae." Brilliant as were his researches on respiration, on muscular irritability and in general embryology, his greatest work was his Elementa, for this must be considered as the first really systematic physiological textbook in the modern sense of the word. Haller also contributed to general literature and was a considerable botanist. His "First Lines of Physiology" was the medical student's standard textbook in the subject for many years and is good reading today.

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†Although living during the time of Malpighi, etc., I have not classified Sylvius with these men as he was the originator of a different type of school of thought, and comes in place here as the founder of the German School of Research.

In Haller's "Elements" and "First Lines" we have a representation of the state of physiological science towards the end of the eighteenth century, although between the date of publication of his work (1757) and the end of the century, physiological knowledge was greatly enhanced by the addition to it of two most important chapters, the one on the chemistry of respiration and the other on digestion.

The chemistry of respiration, as represented in Haller's Elementa, was an utter blank. The importance of Mayow's nitro-aereal spirit had been masked by Stahl's ridiculous phlogiston theory, and all was chaos and confusion. The initial steps in the emancipation from all this was taken by Joseph Black (1728-1799), Professor of Chemistry, first of all in Glasgow, and later in Edinburgh, who, after showing that when lime is burnt in the kiln and then slaked and exposed to the air "fixed air" (CO^2) is given off and then absorbed, and that lime-water becomes cloudy when fixed air is mixed with it, discovered that, in expired air, in the gas produced during alcoholic fermentation and in that given off from burning charcoal, this same fixed air is present. He had rediscovered what Van Helmont called gas sylvestre and he was able to show that it is an universal product of combustion. He further showed this fixed air to be irrespirable.

Black's discoveries were published in 1754, and in 1775 there appeared the epoch-making works of Joseph Priestley (1733-1804) and Lavoisier (1743-1794). Priestley first of all showed that air rendered irrespirable, by having fixed air mixed with it, could be made respirable again by growing plants in it. By decomposing metallic oxides he rediscovered the nitro-aereal spirit of Mayow, but so biased was he in favor of the phlogiston theory that he utterly failed to correctly interpret what he had discovered. To Lavoisier it is that we owe the first clear account of the composition of the atmosphere and of metallic oxides and acids; and in his work entitled "Experiments on the Respiration of Animals" and "On the Changes which the Air Undergoes in Passing Through the Lungs" (1777), we find the first true account of the chemical physiology of respiration. Along with Laplace, he later contributed much to the subject of animal heat.

Great work was meanwhile being done in the physiology of digestion, first of all by the French savant Reaumur (1683-1757), and later by the Abbé Spallanzani (1729-1799) in Italy.

The most interesting question concerning digestion at this time referred to the respective rôles of the stomach wall and of the gastric juice in the elaboration of food.

Borelli, the leader of the Iatrophysical School, had shown that the stomach walls of birds could exercise an enormous crushing force on the stomach contents, which made him believe that the chief function of this viscus is to triturate the food. On the other hand, Helmont, Sylvius and the other partisans of the Iatrochemical School claimed that the dissolving influence of its secretions indicated the chief function of the stomach to be a digesting one. Still others believed that no digestive process took place other than that of putrefaction.

Reaumur, taking advantage of the habit of the kite in vomiting indigestible substances, fed this bird with metal tubes open at both ends and filled with flesh. He found that the flesh was digested. By placing sponges in the tubes and wringing out the juice absorbed by them, he was able to show that it was acid in reaction and capable of digesting flesh without causing putrefaction.

Spallanzani employed in general the same methods as Reaumur and was able to show the relative importance of trituration by the stomach walls and digestion by its juices. He further anticipated some of Pawlow's recent work on the relative digestibility of different foodstuffs.

The following works have been used in the preparation of the above paper:
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Intra-Uterine Pregnancy Indefinitely Prolonged

By N. STONE SCOTT, M. D., Cleveland, O.

Strange as it may seem many problems pertaining to the newer specialties, such as bacteriology, are more definitely settled than certain fundamental questions connected with child-bearing. Probably more people both in the profession and out of it have given concentrated thought, have endeavored to make careful

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Read before the Clinical and Pathological Section of the Academy of Medicine of Cleveland, February 7, 1908 observation, concerning the reproduction of the species than along all other medical lines put together.

"What is the duration of a normal pregnancy?" How simple to ask! How difficult to answer!

The assumption of His, Hausmann[1] and others that the spermatozoa are capable of fertilization after their sojourn of three or more weeks within the oviduct is well founded, so that the real duration of pregnancy in any human female is an unknown quantity.

The profession is, however, pretty well agreed upon an average of 10 lunar or nine calendar months, or 40 weeks, or 280 days from the last menstruation; or 272 days from the date of conception. Authorities differ somewhat in regard to this latter point. Schlichling[2] giving 273 days, Matthew Duncan 278, Lowenhardt-Ahtfelt 281.6 days.

That pregnancy can be considerably prolonged without the death of the child seems reasonably certain.

Depaul[2] reports one such case of 300 days duration. Schroder 320, Winckel 320, Thompson 317, from the last menstruation, 301 from the last sexual intercourse.

Jardine[3] says, "I have seen a case which continued 305 days"; and Simpson[4] reports a well authenticated case of 336 days.

The writer delivered a patient who had overrun her time a full six weeks.

The importance of this point is reflected also by the legal questions which arise in relation to illegitimacy. In Austria[2] births within the limits of 240 to 307 days after the death of the father have been legally pronounced legitimate.

In France, 300 days only is the ruling of the Court as to the maximum.

In America and England we find no absolute limit. Cases of 313 and 317 days duration have been allowed legitimacy by judicial decision.

In sharp contrast to such liberality there is a fair minority among the authorities who are exceedingly rigid in their views.

Wm. S. Stewart says, "Gestation is never prolonged beyond the possibilities which may arise from delayed conceptions."

Duff[5] raises the question, "Is gestation ever prolonged"? and quotes Müller, who says "Protracted gestation is unworthy of credence."

Villard[5] informs us that it is a "figment of the imagination, an error of dating conception."

A most notable instance is found in the testimony, given before the House of Lords, in the famous Gardner[6] peerage case in 1816. Sir Charles Clark voiced the sentiments of his confreres, Gorch, Blegborough, Davis and Pennington, when he declared, "I have never yet seen a single instance in which the laws of nature have been changed, believing the law of nature to be that parturition should take place 40 weeks after conception."

But this paper is not intended to discuss questions of legitimacy nor indeed is it primarily concerned with the living child.

A fetus that dies at any stage is usually expelled with little delay; if, however, it should be retained for a longer time, labor will almost invariably occur at the end of the ninth month.

If fetal death takes place before the end of the third month without resulting abortion, the condition is called missed abortion[7]; from the beginning of the fourth to the end of the seventh month, missed miscarriage; after that, missed labor. These terms do not occur with frequency in medical literature, certainly not in the textbooks; and yet the subject, lying in the borderland between obstetrics and gynecology, is most important not only from the medical but from the medicolegal and moral standpoints as well. Yet its importance by no means prevents great difference of opinion as to the symptomology, pathology and etiology of the subject.

Sinclair[8], quoted by Jewett[9], and Nassauer[10] think that missed abortion does not occur among young and vigorous primiparae; this is certainly too sweeping a statement not founded upon fact, as is shown in the case reported by the writer at the close of this paper.

The late Angus McDonald[3], as quoted by Jardine, removed one horn of a bicornate uterus, containing a fetus which had been retained for a year. He maintained that all cases of missed labor were really instances of conception in one horn of a bicornate uterus, where there was an obstruction to the passage of the child. The writer's case does not confirm such an opinion, nor does it fall under any of the headings mentioned by Edgar[2], who, in discussing the etiology of missed labor, says, "This is obscure, some variety of obstruction is usually present, such as tumors of the soft parts, exostoses, contracted pelvis, cancer of the uterus, cicatricial bands of the cervix or vagina. The possibility of ectopic gestation or of pregnancy in one horn of a bicornate or unicornate uterus must be remembered.

Without further reference to the etiology of the subject, which is at best obscure, let us hastily review the literature that has been collected. We find that highly domesticated animals[11] furnish instances of intra-uterine gestation greatly prolonged; which logically prepares the way for our expectation that the same condition may exist in the female of the human species. Most of the earliest cases on record were discovered at postmortem.

Hortze[12] reports a case which should have been delivered in March, 1848, a year later some fetal bones were discharged per rectum. The patient died in May, 1851, a postmortem revealed the fetus in utero.

Schmidt's Jahrbuch[13], 1848, contains the history of a woman who had a fetid discharge for 11 years and died septic. The fetus was found in the uterus at the postmortem.

Hans Chiari[14] found, at postmortem, in the case of a woman 60 years old, a lithopedion in the left rudimentary horn of the uterus.

A uterine pregnancy of more than five years duration is reported by Cox[15]. Labor pains occurred at the seventh month followed by a copious flow of milk; thereafter she menstruated regularly. Finally an attack of peritonitis caused her demise, after which an intra-uterine pregnancy was demonstrated.

One of the earliest cases, however, terminated more happily[16]. She should have been delivered in December, 1827; in October, 1829, just below the umbilicus an opening formed. This was enlarged and the fetus removed, followed by recovery of the patient.

Halley[17] records, in 1867, a remarkable instance of retention in utero of the greater portion of the skeleton of a dead fetus for a period of four years. These remains were removed with a long pair of forceps after dilating the os.

Rudolph Elbing[18] reports a lithopedion of the left horn of the uterus, followed later by a pregnancy in the right horn; the condition was discovered at the birth of the living child.

Jardine[3], Kitson and Playfair[19] report cases of pregnancy lasting for 16 months. Hodges one of 20 months.

More than a dozen years ago Graefe[20] collected from medical literature some 70 cases of missed abortion. In quite a number the fetus was retained for more than a year; in one instance for 28 years.

My own case presents many points of especial interest and is as follows:

Mrs. B. consulted me first, May 13, 1904, with the following history: age 32 years, married five years, no children, no miscarriages. While always enjoying a fair degree of health she has never been very strong. She first menstruated at 14 years of age, was usually regular except that on several occasions within the past 10 years menstruation has been delayed, at one time as much as four months.

For a number of years past she has had some pain in the right side attended by slight dyspeptic symptoms. She last menstruated 14 months ago; morning sickness, frequent urination and enlargement of the breasts were also present, and fetal movements were felt at the fourth month. At the beginning of the fifth month of pregnancy she had an attack of grippe, so called, with a temperature of 103.5° F. The fetal movements were last felt about one week after the onset of the influenza. For a time she had considerable abdominal pain, so much so that she feared a miscarriage, this gradually subsided during the few weeks following.

However at the ninth month of the supposed pregnancy there was a return of the abdominal pain though with no bleeding or watery discharge. This also shortly subsided for a season, then returned with increasing frequency and severity until the fourteenth month, when she was compelled to seek further medical advice. The abdominal enlargement, which had been pronounced, and progressive up to the time of the grippe attack, gradually receded together with the other signs of pregnancy, except the amenorrhea, so that she questioned the condition of pregnancy.

On physical examination nothing of a pathologic nature was found except in the lower abdomen and pelvis. The uterus was in normal position but decidedly enlarged, as though with a three months' pregnancy. The appendix was tender and considerably thickened. A diagnosis was made of chronic appendicitis, and operation, consisting of appendectomy and exploration of the uterus, was advised. This was performed May 13, 1904, at Charity Hospital. The incision, not over an inch in length, was placed directly over the appendix, which, upon removal, was found to present the characteristic pathology of a chronic appendicitis with a marked hypertrophy of the structures of the organ. The uterus was dilated and the diagnosis of pregnancy confirmed. The membranes were as yet intact, on rupturing these the fluid within was found to resemble thick pus rather than liquor amnii. There was, however, only a slight attendant odor and that not of an offensive character. The amount was very small, being estimated at not more than a couple of ounces. The fetus was removed piecemeal; notwithstanding the length of time since its death, the fetus was not macerated, as is so frequently the case in retained dead embryos, but presented a shrunken, shriveled appearance.

An estimate of the age of the fetus was rather difficult. The size was but little more than would be expected at three months, but the bones were larger and more fully developed than in a three months' fetus; so that we were inclined to believe that the patient's estimate of five months was probably correct. The placenta was firm in consistency and contained but little blood. The uterus was thoroughly curetted and douched with bichlorid. The patient made a speedy and uninterrupted recovery with no signs of infection at any time.

The history of this case refutes the conclusions drawn by many of the authorities. A prolonged intra-uterine pregnancy occurs in a young, reasonably vigorous primipara, without any apparent etiologic factor, such as tumor, or bicornate uterus, or other pathologic lesion, or anatomic anomaly. It seems to be undergoing the changes incident to the formation of a lithopedion. Nor is there reason for thinking the condition might not continue indefinitely, provided sepsis does not supervene.

Lastly the case terminates in a complete recovery as the outcome of the simple but timely operation, dilating and curetting.

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Gastric Ulcer—with Report of Cases

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Gastric ulcer, according to postmortem statistics, is not an uncommon condition. Its frequency varies from .18% at Johns Hopkins Hospital and 1.33% in the Massachusetts General Hospital to 4.5% in London and 5% in Europe, quite a degree of variation. As is the case with gall-stones, it is frequently found at necropsy without any knowledge, or history, of pre-existing trouble so far as the patient knew. I doubt not that many cases of gastric ulcer are endured by the patient without consulting a physician, often terminate in spontaneous cure, and are never recognized on account of there being no postmortem, or perhaps are even overlooked at autopsy when the disease causing death is not plainly due to gastric ulcer.

The thing that concerns most of us, therefore, is not so much the frequency of gastric ulcer from postmortem findings, but the ability to recognize the condition during life when confronted by the patient. I am quite convinced that there is a far greater number of ulcers unrecognized during life than accidently or intentionally discovered at autopsy. I am quite convinced also that the characteristic symptoms of gastric ulcer are not as pathognomonic as one might be led to think by consulting many text books or other literature on the subject. Exceptions to the characteristic symptoms in this disease are just as frequent as are atypical conditions of other diseases.

One need not be a stomach specialist, nor an abdominal surgeon, to acquire some experience in this disease, if he will but observe the conditions which come to him. In other words, I believe that the general practitioner must run across numbers of cases of gastric ulcer, no matter what line of work may particularly interest him, though of course if he waits to note the characteristic symptoms of the disease his cases will be more limited than if he takes into careful consideration other features often considered not at all significant. My own experience with gastric ulcer convinces me that I have overlooked more cases than I have actually diagnosed and carefully treated. This is rather a sad confession to make, and yet I am willing to make it, inasmuch as other men of far greater experience often make an

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Read before the Ashland County Medical Society, September, 1907 erroneous diagnosis, either for or against gastric ulcer, and later see the error of their judgment.

The surprises which come to one giving any special attention to the subject of gastric ulcer are just as frequent as those which come to us in the study of other obscure conditions. The apparently perfect health of today is no assurance that the patient of tomorrow may not have two or three striking evidences of a possible gastric ulcer, which diagnosis can be easily overlooked if one waits for all the characteristic symptoms.

In support of this argument I wish to narrate the history of several atypical cases of gastric ulcer which have come under my observation as a surprise. None of the six cases I here report first were typical in every sense of the term. Several of them were quite unexpected.

Case No. 1, Mr. K., age 40, first consulted me about eight years ago, when he was an applicant for life insurance. An individual with better health and more perfect physique was hard to find. After having successfully passed his life insurance examination he placed himself in my hands for further study of his condition, demanding a report of anything whatever abnormal, nothing of which could be found. The several examinations being entirely negative, he was simply advised to continue with his sturdy habits and rather perfect life. So far as known this man's habits were most exemplary. He was temperate in everything, unless it be that he enjoyed a square meal. Within a year after he passed his life insurance examination, and nine months after my last examination, he was suddenly taken ill one night after having eaten an excessive quantity of blackberries. The next day he had a chill, nausea, vomiting, pain in his back and over the stomach, scanty and highly albuminous urine with all kinds of casts. A few days later he vomited a small quantity of blood, and about the same time the stools showed some dark material supposed to be blood also, but containing many seeds of the berries eaten a few days before. A diagnosis of nephritis and gastric ulcer was at once considered. The patient was fed by rectum and given every attention, but in spite of all this, he became very uremic, dropsical, and died within a few weeks of the onset of his disease. Previous to his last illness he was considered one of the healthiest men and most perfect specimen of manhood in his community. Postmortem showed both kidneys weighing 10 to 12 ozs. with a hard, glistening capsule, and with all the evidences of a subacute parenchymatous nephritis. Upon the lesser curvature of his stomach was a little ulcer one-half inch in diameter, and four inches below the pyloris, in the duodenum, was another ulcer perforated. Aside from a slight hypertrophy of his heart, the condition of the kidneys and the ulcers, everything else was negative at autopsy. It is quite conceivable that these ulcers were secondary to the inflammation of the kidneys, though possibly the ulcers and nephritis were aggravated by his imprudent eating of berries. It seems rather strange that such a rapid onset so quickly fatal should follow such imprudence in eating, but it seems just as strange that this man of perfect physique should have had much trouble for any length of time previously without some symptoms.

Case No. 2, Mrs. K., age 35, was seen in consultation two years ago. At that time she gave a history of having had occasional attacks of indigestion. She was partly cyanotic and very dyspneic. Air hunger was the most striking peculiarity in her condition aside from a rapid pulse, distended abdomen with pain in the epigastrium and some rigidity of the recti muscles. The attending physician and myself were unable to decide whether it was a case of gastric ulcer without hemorrhage, vomiting, or any other typical symptoms, or simply an hysterical condition. Our diagnosis lay between hysteria and perforated gastric ulcer, rather a wide range as you will see. The patient, however, was of a peculiar type and never allowed a physician to actually prescribe for or examine her as circumstances demanded. When we left the patient we felt that our work was incomplete. Gastric analysis was refused and advice to rest in bed was not observed. Two days later she had an attack of vomiting, losing between a pint and a quart of pus and blood. From that day on she made a fairly speedy recovery though she had other symptoms annoying her. She had a floating kidney, displacement of the uterus, with painful menses and occasional hemorrhages between the periods. She had symptoms of occasional appendicitis. Her appendix was successfully removed six months ago. She has had gastric hemorrhages before and since her appendectomy. There is not a doubt in my mind now that this woman had a perforated ulcer two years ago, from which she recovered in part without much treatment and there is good reason to think she will have recurrences of the trouble. She has all faith in her surgeon, though she will not allow him to come near her unless she is certain that her condition will speedily prove fatal. One can hardly see how she could recover spontaneously from a perforated gastric ulcer, at the same time one can hardly make any other diagnosis. I am convinced from the nature and course of her symptoms alone, that she had a perforated ulcer; this conviction is strengthened by the history of one of the subsequent cases which I also report. You will observe that in neither of these two cases just reported was there any gastric analysis, nor was there any history of long standing disorder of the stomach.

Case No. 3, Miss Z., age 25, first consulted me in April, 1905. At that time I diagnosed phthisis. Her father and one sister died of tuberculosis. She herself had a negative history except that of painful and scanty menses, and an occasional "attack of biliousness" for several years previously. These attacks would start with pain over the epigastrium, lasting from a few hours to half a day, and would terminate by vomiting. The pain was severe. She was a graduate nurse and gave a very intelligent account of her previous condition. At the time she consulted me it was simply for the pain in the upper abdomen, lasting only a few minutes, which annoyed her at times, as well as for a hacking cough and slight expectoration and cessation of the menses for several months previously. Her physical examination showed a pulse of over 100, temperature of 99° to 100°. There was impaired resonance and a few rales at both apices of the lungs. There was tenderness over the gall-bladder, a slight amount of icterus, and an anemia with hemoglobin 75%, red blood corpuscles and white cells were practically normal. All efforts to increase this woman's nutrition, stop her cough, relieve her pain and jaundice were baffled. She was gradually losing weight. A gastric analysis, six weeks after first seeing her, showed an achylia gastrica. There was a total acidity of 10. Free HCl and everything else were lacking. Another gastric analysis two months later showed a total acidity of six with everything else lacking. The patient was put to bed and given open air treatment as one would give a patient with tuberculosis, and fed as one would feed an achylia gastrica. There were no sharp pains in the abdomen at this time. Diagnosis of gall-stones was ruled out. Gastric hemorrhages were never noticed and there was no history of them. Vomiting set in before she was put to bed and became very annoying with the oncoming weeks. The pulse increased in frequency and the temperature became more irregular. Gastric lavage was employed in spite of the fact that there was no dilatation. There was retention of stomach contents eight to 10 hours after eating, but sometimes after having continued the lavage when all the gastric contents were supposed to have been removed and the stomach clear from mucus, there would be a sudden regurgitation of other food which had been eaten the previous day. This food was nearly always stained with bile. Then again lavage would be continued for 15 or 20 minutes or more, after which we were quite sure that the stomach was clear. The lavage with the occasional double retention led to the diagnosis of pyloric obstruction, or hour-glass stomach. The patient seemed to be going from bad to worse and was frankly informed that she might have a stricture of the pyloris, and also that there was very likely a pulmonary tuberculosis. She requested operation, a gastro-enterostomy, or whatever was necessary when on the table. Operation was performed in October, 1905. Hour-glass stomach was found, and at the seat of the constriction a big white scar of an old ulcer. There were many adhesions about the gall-bladder, stomach and duodenum. The patient lived only four days after the operation, and we might say she died from shock. There was no post-mortem. This was a striking case of hour-glass stomach, pre-existing gastric ulcer, achylia gastrica and pulmonary tuberculosis. I cannot make any further diagnosis. The gall-bladder was free from stones. Pulmonary tuberculosis was quite evident in spite of the fact that there was no expectoration and consequently no bacilli. I present the case for your consideration as a unique one in which there was an hour-glass stomach, positive evidence of gastric ulcer with but a few of the direct symptoms, and the presence of an achylia gastrica.

Case No. 4, Mr. D., age 38, a marine engineer, consulted me in August, 1906. He gave a history of dyspepsia for eight years previously, with pain in his abdomen. He had had unusually good health most of the time and very seldom consulted a physician except for occasional attacks of pain in his stomach and "indigestion," to use his own words. He seems to have been a strong and hearty man. One month previously he suddenly had an attack of gastric hemorrhage, vomiting about one quart of blood he thought. He entered a hospital at Duluth, and was given the usual medical treatment for gastric ulcer, rectal feeding, silver nitrate, belladonna, bismuth and opium. Previous to the time he consulted me he had been taking soft diet by mouth for two weeks. He said he was feeling well except that he caught cold easily and was constipated. Physical examination showed that his stomach was but slightly dilated, the greater curvature extended to the umbilicus. Gastric analysis showed free HCl 18, total acidity 48, and everything else practically normal. There was no blood in the stomach contents and the secretions were about at the average, or below rather than above. The stool was examined several times for occult blood with negative findings. The symptoms of pre-existing dyspepsia with pain and tenderness, and especially the recent hemorrhage, were sufficient to make a diagnosis of gastric ulcer. The ulcer probably healed in a month or else there would have been traces of blood in the stools which were carefully examined, and he would have had annoying symptoms following. He has had remarkably good health ever since and to me it seems that there is no indication for any medical or surgical treatment at the present, though of course a careful diet is most important. He came to my office, August 14, 1907, saying he felt well, but was constipated. He has vomitel only once since his previous call in February, 1907. There is no distress in his stomach after eating, nor is there any tenderness in the epigastric region. The lower border of the stomach is at the umbilicus, the position being diagnosed by the succussion splash. inasmuch as he rather resents the idea of using the stomach tube at present.

Case No. 5, Mr. G., age 46. His mother died of phthisis florida. Father died of apoplexy at 76. He has one sister living and well, though she has had a malignant growth of the jaw. He himself was never seriously ill though he had a supposed attack of "malaria" 16 years ago, which was followed by slight jaundice. The last three years he has had frequent attacks of acute gastritis. The attacks would come on every two or three months. These attacks were associated with vomiting, and once only was there a suggestion of the slightest amount of blood in the vomitus. He had been losing considerable weight in the last eight months. Six months previous to my first interview with him, in March, 1907, he was put at rest in bed and treated for gastric ulcer. The treatment seemed to be fairly successful, though he had been losing in weight ever since. He was very pale with an irregular temperature of 99° to 101° and a pulse seldom below 100. His greatest tenderness and pain were in the left side of the abdomen beneath the eighth rib; but he also had pain in the left side of his neck though there was no glandular enlargement. In March, 1907, gastric analysis was done three times, the gastric secretions were below normal, but otherwise negative. No blood was found in the gastric contents. The stool was examined five times for occult blood and none found. The patient became cachectic, his blood showed hemoglobin 70%, over 5,000,000 red cells, and leukocytes 8,000 to 12,000. There was no dilatation of the stomach, but there was much tenderness over the appendix. He had a left inguinal hernia. A more perplexing case for diagnosis I have not seen in my work recently. On account of his tuberculous history and malignancies in other members of the family, his supposed malaria six years ago followed by jaundice, the diagnosis of gastric ulcer previously and the appendicitis two or three years ago, I did not care to venture a definite diagnosis one way or the other. Gall-stones were not improbable; chronic appendicitis might have explained many of his symptoms; malignancy around the seat of an old gastric ulcer was what I feared, and tuberculosis of the peritoneum was not at all improbable. Operation was advised in April, 1907, and he consulted one of the most celebrated surgeons in the land, who diagnosed gall-stones with possible malignancy. As for myself I reversed the order and felt like saying malignancy with possible gall-stones. When upon the operating table the rupture was operated upon first. Another incision in the upper part of the abdomen showed that there were no gall-stones, the appendix was normal, but there were many adhesions uniting the greater curvature of the stomach and diaphragm, especially on the left side beneath the ribs. The adhesions were dense. The surgeon diagnosed pre-existing gastric ulcer with perforation which had never leaked on account of the adhesions, he said that there was evidence of former ulceration about one-half the size of a man's hand along the greater curvature of the stomach. The stomach was held well up beneath the diaphragm by the adhesions. There was no dilatation and no stenosis of the pyloris; the adhesions were therefore only partially loosened and the organs returned to the abdomen. No other operative procedure was considered wise. The patient was put back to bed and developed a pneumonia within 10 days, which almost terminated fatally. He returned to his home at the end of four weeks weighing 109 lbs. and felt that he ought to be well on account of having undergone a surgical operation. He was advised to eat freely though carefully of a mixed diet. But in this both patient and physician were greatly disappointed. In less than 10 days he had all his former symptoms—irregular temperature from 99° to 102°, weak and rapid pulse, distress after meals, belching and bloating with nausea, sometimes vomiting, and marked constipation. Pallor was extreme and urine scant, containing albumen and casts which were not present before the operation. Orthoform to relieve his pain in the stomach was ineffectual; so were bromids. In desperation we resorted to a diet limited absolutely to milk, eggs, and purees. Flax seed poultices were applied to the abdomen for several weeks, night and day, and gave great relief. Basham's mixture was used freely. Under this regimen the patient has greatly improved. He is ready to begin his work while subsisting on a semi-solid diet. On August 30, 1907, he weighed 136 lbs. and he looked well. His temperature was 99 1/5° and pulse 100 after riding a bicycle.

Case No. 6, Miss H., age 30, was first seen in May, 1907. She had a negative family history and she herself has had good health until two years ago, since which time she has been bothered considerably with pains in the stomach increased two to three hours after eating. At that time there was pain in the epigastrium as well as posteriorly to the left of the spinal column and beneath the left shoulder blade. There was loss of weight. She vomited occasionally after taking acids. There was belching and pyrosis with much constipation. Physical examination showed considerable pallor with hemoglobin 75%, red cells 4,500,000 and leukocytes 4,000. Heart and lungs were negative. Liver and spleen were palpable. Both left and right kidneys were floating. The uterus was pushed to the left and there was a cyst in the right tube or ovary, not painful. Succussion splash in the stomach could be found below the umbilicus. The gastric analysis showed achylia gastrica, absence of free HCl and combined HCl with a total acidity of 10. Rennet was absent. When the stomach was expanded with air it was greatly enlarged extending three to four inches below the umbilicus. The tenderness to the right of the umbilicus lay between the gall-bladder and appendix. Examination of the stools for occult blood showed a very marked positive reaction. I had every reason to believe that in this case of splanchnoptosis there had been a former gastric ulcer but at that time an achylia gastrica, with possibly an ulcer of the duodenum. There was no blood in the gastric contents. In June the patient returned to the city for operation. At this time examinations were made as before and gave practically the same results, except that blood was found in the gastric contents and none in the stools, though several examinations were made. Gastro-enterostomy by R. E. Skeel was done with difficulty on account of the dense adhesions between the stomach and surrounding organs. There was a thick scar of ulcer near the pyloris. In cutting through the stomach bleeding ulcers were found on the mucosa. The patient made a rapid and good recovery.

These six cases show first a case of perforation which proved rapidly fatal with no pre-existing symptoms, the ulcer possibly being secondary to nephritis. Two cases of perforation with recovery for the time being without operation. Two cases of achylia gastrica with no previous symptoms of ulcer, one with formation of hour-glass stomach. One case of suspected duodenal ulcer with achylia gastrica, but operation revealed gastric ulcer. One case of extensive ulcer of the stomach, requiring exploratory incision and subsequent medical treatment. In none of the cases was there a hyperchlorhydria.

Before proceeding further in the discussion of gastric ulcer I should like to call attention to some of the cardinal features and symptoms of this condition. The distress after meals, nausea, vomiting, hematemesis, pain and tenderness, rigidity of the abdominal muscles, age and sex, together with gastric analysis, all are typical symptoms when associated, but as these symptoms often exist alone, and inasmuch as any one of them may be found in a number of other conditions also, it is always necessary to anticipate the lesions likely to be mistaken for ulcer. Gall-stones, appendicitis, chronic gastritis, cancer of the stomach, cirrhosis of the liver, diseases of the heart, kidneys and pancreas, hysteria, all are capable of causing some of the symptoms just named. I would say, as has often been said before, diagnose by exclusion. Any of the diseases mentioned will produce other symptoms and physical signs in addition to any one or more of the symptoms already named. A case of severe pain in the stomach, of frequent occurrence, usually increasing after eating, especially of certain foods, in the absence of other symptoms has much significance referring to gastric ulcer. Vomiting of blood, or often the presence of occult blood in stomach contents and feces is an item of no mean significance whenever there are the fewest symptoms referring to gastric disturbance. But should pains come on at night and not just after meals, be very sudden and be followed a few days later by a slight icterus, one would then think of gall-stones.

Gall-stone and ulcer cause about an equal amount of tenderness and rigidity of the abdominal muscles. A case of hematemesis in a young girl, even though quite profuse, in the absence of rigidity of the abdominal muscles and tenderness in the epigastrium, is more likely to be a case of hysteria or some menstrual disorder than one of gastric ulcer. Such a case came under observation a few years ago.

A young girl with very painful menses, which alarmed her parents much more than the physician, was after all advised to submit to dilatation of the cervix. The day following the operation the patient insisted that there was complete paralysis of both legs and three weeks passed before she moved the limbs at all. After her return home from the hospital, and while she was still walking on crutches, she had one morning quite a profuse gastric hemorrhage. The family, knowing of the condition of gastric ulcer, at once became alarmed. The patient had considerable pallor but not gastric distress, no abdominal tenderness nor rigidity. The suggestion of a gastric analysis and hints as to the use of the stomach tube proved a very potent remedy in stopping further hemorrhage and the girl has been quite well ever since.

Hemorrhage associated with cirrhosis of the liver I have seen quite frequently, but I find in appendicitis a condition which is hard to differentiate from gastric ulcer in the absence of marked symptoms, especially hemorrhage. Appendicitis of itself is often hard to diagnose, and sometimes extremely hard to differentiate from chronic gastric ulcer or gall-stone. By way of illustration let me give briefly the history of another case in which this feature was marked.

Mr. T., age 37, was first seen in January, 1906. He gave a suggestive history of gall-stone, with the attacks of pain at night a few hours after dinner. Frequently there was vomiting. Gastric analysis was practically negative, but there was pain and tenderness over the pyloris. After a month's careful observation, with an uncertain diagnosis but with some improvement in his general condition, he suddenly had severe pain over the stomach and vomiting of mucus and bile. The upper portion of the abdomen was very rigid and the lower portion soft as any healthy abdomen. There was much pain over the stomach, especially about the pyloris, and none whatever over the appendix. Twelve hours later the condition was about the same. Rigidity of the abdomen in the ensiform region was so great that I feared perforation from a gastric ulcer; the lower portion of the abdomen was still as soft as dough; the temperature and pulse were rising. A few hours later he had an intense sharp pain of sudden onset in the lower portion of the abdomen just over the bladder. At once the muscles became rigid there and softer above. I was then sure of perforation somewhere. R. E. Skeel was called in consultation. A diagnosis of perforated appendix or bowel was made and a ruptured gangrenous appendix was removed at once. The patient has been quite well ever since, having but little or no trouble with the stomach and has had no more gall-stone colic.

While willing to admit my lack of skill in diagnosis and to give credit to the modern surgeon for all kinds of skill, I at the same time feel sure that any competent surgeon would have been undecided whether to make an incision in the upper or lower portion of the abdomen had he seen this same case six hours earlier than it was seen by the consultant.

Concerning the treatment of gastric ulcer, there is still considerable difference of opinion. Fortunately the surgeon and physician are rapidly coming to a more uniform opinion as to the proper method of handling these cases. There have been some sharp criticisms in the past 10 years by both physician and surgeon concerning the manner of treatment given these cases when treated by the other fellow. Happily these criticisms are being forgotten and the profession now seems to be anxious to do the best for the patient without further vituperation of the other man's methods.

As an internist I can only endorse the sentiments of many others in the line of carrying out the strictest regimen in medical treatment whenever possible. That is, whenever necessary, and whenever the patient is willing to submit to proper treatment. The advantage derived from rest in bed in case of recent ulcer, especially if there be hemorrhage, with the total withdrawal of food by the mouth, cannot be overestimated. Rectal feeding for a week to 10 days is often necessary. Astringents, such as bismuth, silver nitrate, belladonna, adrenalin, tannic acid, as well as orthoform for the pain, are all remedies of value. Alkalis with bismuth and magnesia are extremely valuable in overcoming the acidity and constipation if they be present. One must remember, though, that these ulcers will heal of their own accord if proper rest and prolonged abstinence from food by mouth be carried out faithfully. In case of pain, and often without it, poultices to the abdomen, Leube's treatment with vaseline application, are both of value and need only to be mentioned. A more difficult subject than proper medication is proper diet and when to begin to administer it after the stomach has been deprived of food for some time. The physician's skill and tact in selecting the diet in these cases may mean his success or his failure in the handling of the case. The treatment of the complications, such as hemorrhage and perforation and frequent relapses, as well as stenosis of the pyloris, need not be discussed here, except to say that a competent surgeon, neither too conservative nor too aggressive, should be at the elbow of the physician when such conditions arrive. The surgeons, or at least some of them, we are aware, have until very recently been claiming everything in the way of getting results by their skillful operations. But sufficient time has now passed since they have invaded this field so boldly to convince one that much of their work is not all glitter either. However, no one can have more respect than I myself for the work done by such men as the Mayos of Minnesota, Patterson and Mayo Robson of England, as well as a great many others who are doing equally efficient work in this line. I am firmly convinced that their aggressive work has been of the greatest value not only in the cures which they have effected but in the awakening interest in the subject which they have given to the profession. That the surgeon can do much by his operations, but that he can often fail also, there is plenty of evidence. A brief report from C. A. Hamann of a fatal case of "Peptic Ulcer Following Gastrojejunostomy" in the May, 1907, number of the CLEVELAND MEDICAL JOURNAL is worthy of the consideration of both the physician and surgeon.

To me it seems that the most difficult class of cases to handle in general practice, and of these I am sure the general practitioner (not necessarily the stomach specialist) will see a great number if he only looks for them, is that class in which there is but slight ulceration, and yet the patient is not very sick and is unwilling to make any sacrifice for his cure. It is often impossible to persuade these patients that they are afflicted with anything more than a trivial disorder of the stomach. They are patients who take an ineffectual cure from a half dozen physicians, sometimes getting well in spite of treatment rather than because of it, and often after a number of good resolutions, at once broken, to carry out the physician's directions. They give up treatment as soon as they begin to improve and consequently develop a state of chronic gastric ulcer. They are ambulant cases. I have seen two instances of this kind very recently.

The first case is that of a young man of strong physique, but of reckless habits in eating and taking of stimulants, mostly beer in large quantities, he has a gastric ulcer which bleeds occasionally. He has many of the typical symptoms, though a hypo-acidity, with blood in gastric contents and stools. He was advised to take the rest cure and treatment for the ulcer, but his first prescription and first attempt at a careful diet have given him so much relief that he now is attending to a heavy business with greater vim than ever. He is quite relieved with but little sacrifice but I doubt whether he is well.

The other case is that of a nurse girl. I am convinced that she has been suffering with ulcer for five or six months though she has been getting along without a physician. She now has considerable pallor, vomits some blood, has distress after meals, with pain and tenderness in the ensiform region and rigid muscle. Other conditions I have ruled out quite satisfactorily, though so far there has been no gastric analysis nor examination of the feces. She is on strict diet and feels that office treatment ought to bring about a cure, claiming that she cannot afford, nor take time, for a better line of treatment. While the treatment is but palliative, it is my duty to enforce the most strict regimen possible with the hope that it may do some good.

You will no doubt agree, from the rather rambling report here given, that the work of the physician in the treatment of gastric ulcer is often interesting, frequently trying, often successful, but too frequently a failure.

The Duration of Disability in Injury and Disease

By H. S. MATHEWSON, M. D.
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Of all the questions asked us by our patients one of the most difficult to answer is this "Doctor, when shall I be able to return to my work?" We are often able to tell a man what is the matter with him. We can usually give accurately the course of an attack of acute disease but the length of time necessary for convalescence depends upon so many factors that the actual duration of disability in a given case is hard to prognosticate.

It has seemed to me that but little attention has been paid to this subject in our studies of diseased conditions in general, and for this reason I invite your attention to some statistics taken from the records of the United States Marine Hospital at the Port of Cleveland, Ohio. These statistics are concerned solely with the question of the duration of disability in certain conditions of injury or disease.

The average sailor does not come to the hospital until he is disabled. As he must return to work in most cases when he leaves the hospital, we continue hospital treatment until the patient is able to work before we discharge him.

For the purpose of this brief paper I have examined the records of the Marine Hospital for the past nine years and have carefully excluded all cases discharged not improved from whatever cause. The remaining cases are distributed among the commoner forms of injury or disease, the rarities in medicine or surgery not occurring in numbers large enough to be worth considering. I have grouped these cases as medical or surgical.

Read before the Academy of Medicine of Cleveland, January 17, 1908

A word of explanation as to nomenclature is perhaps necessary. The nomenclature used for the sake of uniformity in reports from various stations of the service is the "Nomenclature of Diseases, Royal College of Physicians of London," it is very English as may be imagined and if nothing else is conservative.

For example appendicitis has not as yet won recognition and we report all cases of appendicitis under the diagnosis of typhlitis. With this much by way of preface we will consider the medical cases covered by this paper.

I have arranged these cases in order of length of time the disability continued and the result may or may not agree with our preconceived ideas.

Valvular diseases of heart	87 days.
Locomotor ataxia	87 "
Chronic bronchitis	63 "
Diabetes mellitus	58 "
Pulmonary tuberculosis	46 "
Typhoid fever	41 "
Eczema	36 "
Erysipelas	36 "
Rheumatism	30 "
Chronic nephritis	27 "
Asthma	24 "
Syphilis	24 "
Pneumonia	23 "
Lumbago	18 days.
Malaria	17 "
Neuralgias	17 "
Chronic gastritis	16 "
Conjunctivitis	14 "
Influenza	13 "
Acute bronchitis	13 "
Diarrheal diseases	13 "
Measles	11 "
Alcoholism	8 "
Tonsillitis	7 "
Pharyngitis	3 "

Injuries and conditions more or less loosely grouped as surgical are as follows:

Fracture of the femur	116 days.
Fracture of tibia or fibula or both	41 "
Hernia	40 "
Typhlitis, operative	40 "
Fractures of upper extremity	34 "
Varicose veins of leg	33 "
Ulcer of skin of leg	30 "
Dislocation of humerus	28 "
Stricture of the urethra	27 "
Sprain of knee	26 "
Fistula-in-ano	26 "
Wound of hand	26 "
Sprain of wrist	25 "
Cystitis	24 "
Sprain of ankle	23 "
Ulcer of penis	21 "
Contusion of back	20 days.
Varicocele	20 "
Gonorrhea	19 "
Necrosis of bone	19 "
Burns and scalds	19 "
Bubo	19 "
Phimosis	17 "
Orchitis	16 "
Contusion of lower extremity	15 "
Abscess of connective tissue	14 "
Paraphimosis	14 "
Wound of scalp	13 "
Sprain of back	12 "
Epididymitis	11 "
Contusion of shoulder	10 "
Contusion of chest	10 "

Perhaps a word of comment may be pertinent in regard to certain of these figures.

I see in the course of a year many cases of too hurried discharge from treatment, made either for the sake of statistics or through ignorance or carelessness, which reflect little credit on either the institution where they were treated or the medical men or surgeons having them in charge. In my experience the surgeon is the greater offender in this respect.

Acute dilatation of the heart or a dangerous cardiac syncope may follow a too early discharge from hospital following an attack of either typhoid fever or pneumonia or influenza and in these diseases the figures I have given, of 41, 23 and 11 days, should be increased by about 5 days each in cases seen from the beginning of the attack.

All operative cases of hernia and all laparotomies should have at least six weeks of freedom from manual labor. In hernias which come to operation a second time the almost invariable story is told of having left the hospital too soon, often at the end of three weeks.

The cases, however, which in my experience are most productive of a partial disability which remains permanent are injuries to joints. Many of the limpers we see daily about the streets are old, non-treated or half-treated sprains of the ankle or knee. A sprain of the ankle should be treated until mobility is normal and until the patient can walk several miles without pain or swelling of the foot or ankle joint.

The average disability of the 70 cases, of sprain of the ankle, mentioned here is 23 days, but the severer types of injury to this joint require about two months treatment. The best guide in prognosis in these cases is the amount and distribution of the ecchymosis about the joint. A case showing ecchymosis half way up to the knee is of a severe type, because in these cases the tendon sheaths as they pass the joint are probably torn open and the blood following the tendons appears over the bellies of the muscles high up the leg. This is most marked on the outer side of the leg following injury to the sheaths of the peroneii.

Sprain of the knee and wrist call for treatment aimed at the same perfect restorations of function. At the elbow and shoulder sprains probably do not occur. Contusions and dislocations with or without fracture are probably responsible for most of the disabled joints we see.

To be especially guarded against is limitation of motion at the elbow. In most cases this may be avoided by proper treatment. At the shoulder a slip joint following an insufficiently treated dislocation is not uncommonly seen.

Probably many of you are familiar with the so-called Zander machines for the passive motion treatment of disabled joints. Reports from the Massachusetts General Hospital where these methods have been in use for some time are quite encouraging and it is to be hoped that the procession of *recovered* patients which have left our hospitals more or less disabled may be in time diminished, for too many of them are chargeable to insufficient treatment and will continue disabled as long as they may live.

Studies in Aneurism

HISTORICAL AND CRITICAL

By JAMES G. MUMFORD, M. D., Boston, Mass.

(Concluded from February Issue.)

We have now reached in our studies the last half of the eighteenth century. New names and accounts of frequent experiments crowd the text. False aneurism was extremely common in those eighteenth century days, and true aneurism appears to have been seen more frequently than now. The great Haller of Göttingen and Bern, lecturing in the earlier decades of the century, had made clear to surgeons the distinction between true and false aneurism, though in some fashion many men before Haller's time had appreciated that distinction. Most of the well-known eighteenth century surgeons were performing some variety of ligature operation,—following the method of Antyllus or of Anel; but curiously enough, as we come down towards the time of the Hunters and the end of the eighteenth century, we find some experienced teachers grown weary of the ligature, and asserting that the only safe treatment for aneurism of the limbs is amputation. The great Pott—Percival Pott—in 1779, insisted strongly upon the importance of amputation in certain cases.

Pott is one of those delightful characters who appear from time to time in surgical history. He was personally attractive; a sound clear-thinking man, full of original opinions, energetic and industrious. Every medical student knows how, when a young man, Pott fell down in a London street and broke his ankle; and lay there, studying the nature of the injury until he had formulated in his own mind a clear conception of that thing known to us as Pott's fracture. For more than a generation, in the middle of the eighteenth century, he was the greatest surgical authority in England until the rise of his pupil John Hunter overshadowed him. Pott was a great clinician, perhaps the last of the Paré school. To Pott sepsis and gangrene were ever-present horrors, and his dread of those calamities led him to his pronounced convictions on the treatment of aneurism. He wrote in 1779: "If a man was to answer from theory (regarding the treatment of aneurism), he would say that the skin is to be divided * * * and the artery to be tied above and below the dilatation * * * Sorry am I to find myself obliged to say that, as far as my observation and experience go, such an operation, however judiciously performed, will not be successful, that it will not save the patient's life." "Nor have I ever seen any other operation than that of amputation which has preserved the life of the patient." Pott's opinion was not accepted cheerfully by all his colleagues, and one reads of many English surgeons who rejected his teaching, because on the one hand they found abundant evidence that ligature frequently does suffice; and on the other hand because, as they asserted, aneurism sometimes is multiple, so that the amputation of a leg for popliteal aneurism must be valueless, and a cruel mutilation, when the patient suffers at the same time from femoral, iliac or brachial aneurism. The debate waged hotly especially in England throughout the eighteenth century, while through the debate and through experimentation men were coming to a just appreciation of the nature of aneurism, of its various forms, and of modes of treatment.

William Hunter was born in Scotland in 1718, the brother of John Hunter and ten years his senior. We connect John Hunter's name with a great operation for aneurism, but William Hunter, too, made an important contribution to the subject. In 1761, when forty-three years old, and during his younger brother's absence with the army, William Hunter wrote: "In a former paper upon the aneurism I took notice of a species of that complaint which so far as I know had not been mentioned by any authors, viz: where there is an anastomosis or immediate connection between the artery and vein at the part where the patient had been let blood, in consequence of the artery being wounded through the vein; so that blood passes immediately from the trunk of the artery into the trunk of the vein, and so back to the heart." In that writing we have our first description of aneurismal varix, with William Hunter as its discoverer. Other surgeons since Galen's time had written of false aneurism due to wounding the brachial artery by the surgeon in venesection, but none of them had described an arteriovenous anastomosis. William Hunter not only recognized aneurismal varix, but appreciated its relative harmlessness. He describes a number of cases and tells us how a patient may bear pulsating veins in his arm through a long life, without special discomfort or danger.

William Hunter did many other things, notable to surgeons, for which one should remember him;—he founded a great school of anatomy; he explained in a famous book the nature of the placental circulation, and he established by will the Hunterian Museum of Glasgow, his Alma Mater. He was the brother, teacher and patron of John Hunter, and for these things perhaps he is best known to us.

The student of aneurism may not pass by John Hunter without some interesting thought on the nature, caliber and work of that great man. One struggles vainly to conceive and to summarize the significance and the magnitude of his life and accomplishments. His greatness lies not in his labor, in his enthusiasm, in his diligence, in his eccentricities or in his popularity. Other men have exhibited these qualities. He was a profound and original thinker who realized deeply the immaturity of science; who struggled sanely and boldly to remedy its defects; who founded a great school of surgery; who popularized and made possible a great forward movement in medicine. He was a luminous, persuasive and inspiring teacher; a close, accurate, and clear-headed observer; a diligent and resourceful practitioner; a daring, brilliant and conservative operator; a lucid, striking and convincing writer. But we are concerned only with his contributions to the study of aneurism.

John Hunter was a great physiologist. I know of no surgical life more rich in suggestion to the surgical physiologist of today than is that of John Hunter. His work in the physiologic laboratory grew out of his interest in comparative anatomy. He was an incessant vivisector, as well as a dissector of dead animals, so that his appreciation of the appearance and action of living structures and organs was unrivaled. Hunter undertook intelligently a study of aneurism and sought rationally a cure. In one of his lectures to students he said: "By an aneurism, then, I understand the dilatation of the coats of an artery, arising probably either from disease or accident, producing weakness, which becomes the remote cause, while the force of the circulation is the immediate cause * * * It must in fact in all cases arise from a disproportion between the force of the blood and the strength of the artery." He asserted that an aneurism proper is not caused by the weakening or destruction of one of the coats of an artery, with a consequent dilatation of the remaining coats, and to prove this he performed an interesting experiment on a dog. He cut down upon the animal's carotid and removed carefully the artery's outer coats until there remained the intima only, through which he could see the blood coursing. Then he sewed up the wound, leaving in its depths this weak-walled vessel, expecting that an aneurism or a rupture would result. The dog returned promptly to a cheerful life, and, so far as the experimenter could observe, nothing happened. When he killed the animal several weeks later he found to his surprise, as he says, that "the sides of the wound had closed on the artery, and the whole was consolidated to and over it, forming a strong bond of union so that the whole was stronger than ever."

This experiment, with others of similar nature, led Hunter to the belief that something more than a wound or mechanical weakening of an artery is necessary to produce aneurism. He became convinced that actual disease of the vessel is a *sine qua non.* Indeed he denied the existence of so-called false aneurism, which must be regarded merely as a pulsating hematoma from traumatism. In like manner he pointed out that a ruptured true aneurism must not be regarded as giving rise to false aneurism. When a true aneurism ruptures, a true aneurism remains, complicated however by a rent in the sac and a pulsating hematoma.

Hunter next turned his attention to the extent of disease of a vessel affected by aneurism, and came to appreciate that frequently the actual dilatation does not necessarily represent the total extent of the disease. Frequently an artery is weakened by atheromatous or syphilitic processes for a considerable distance above and below the site of the actual swelling. This condition explains the fact that a ligature placed immediately above the aneurism or immediately below it, according to the method of Antyllus, fails often to effect a cure, because the disease of the vessel progresses, the ligature does not obliterate, and secondary hemorrhage follows. Moreover, Hunter asserted that the operation of Antyllus and others of his predecessors, dealing as it does with diseased vascular structures, is prone to set up severe inflammatory reactions, causing extensive swelling of the limb and a consequent blocking of the necessary collateral circulation, with frequently resulting gangrene of the distant parts. In this connection one pauses to reflect that the conditions in the operation of Antyllus, to which Hunter objected, are quite different from those present in the modern operation of Matas, which I shall describe shortly. In the modern operation the surgeon deals with patients who have been thoroughly treated for their syphilis, if syphilis exists; moreover, in operating today, our asepsis eliminates the old-time infections.

Hunter's next interest was in the question of anastomosis;

and one bears in mind that he is discussing aneurisms of the femoral, the popliteal and the brachial arteries only. He remarks incidentally that other vessels subject to aneurism have either an abundant collateral circulation or are beyond the reach of surgical operations. He came to appreciate the nature of collateral anastomosis, through an interesting experiment upon a stag,—an experiment made in connection with another investigation. He had been granted the privilege of using the wild creatures in the Royal Park at Richmond. On one occasion he directed to have caught a deer, and he tied the animal's external carotid artery on one side, in order to watch the effect upon the corresponding antler. After applying the ligature he observed that the antler, then half-grown, became immediately cold to the touch; and he debated with himself whether the horn would be shed, or retained longer than usual. Some weeks afterwards, on examining the animal again, he found that the wound was healed, and that the antler was warm and growing. His first thought was that the ligature had slipped, but after killing the deer and making a careful dissection he discovered the external carotid obliterated at the point of ligature, while a number of small tortuous neighboring vessels had enlarged, and were carrying a proper blood supply to the horn, in the manner we should now expect. Some notion of the nature of collateral anastomosis had long existed, but this operation of Hunter's, followed by a series of similar investigations, demonstrated definitely, and for the first time, the manner in which minute arteries may take up the burden imposed upon them by the ligature of a main trunk.

Such preliminary work of Hunter's led him to enunciate, in opposition to Pott, his pertinent query: "Why not tie it (the artery of an aneurism) up higher in the sound parts where it is tied in amputation, and preserve the limb?"

In December 1785 there was admitted into St. George's Hospital, under Hunter's care, a coachman, forty-five years of age, with a popliteal aneurism which had troubled him for three years. This patient gave Hunter the opportunity for which he had waited, and one month later, in January of the following year, in the presence of a large company of distinguished and interested observers, that surgeon performed the first famous operation for aneurism by the Hunterian method. He opened down upon the femoral artery below the middle of the thigh, through that intermuscular space known since as Hunter's canal, and secured the vessel by a double ligature in a perfectly healthy area.

It is interesting to observe the subsequent history of this case. The wound became infected, as we should expect, but no serious amount of inflammatory reaction followed. As Home, Hunter's brother-in-law and biographer, reports, "The limb was found, some hours after the operation, not only to retain its natural heat, but even to be warmer than the other leg." The convalescence was slow according to modern ideas, for the patient could not leave the Hospital until six weeks after the operation. For some months afterwards the cicatrix kept breaking down occasionally, and discharging a number of small threads; but by the middle of July, six months after the operation, the wound was permanently healed, and all evidence of the aneurism had disappeared. This first patient died of some other disease than aneurism about a year later, and Hunter was able to examine the limb. He found the little wound in the thigh to be sound, the artery partially obliterated above the ligature as far as the profunda, and the aneurismal sac shrunken to the size of a hen's egg, with its lower orifice entirely lost; and most interesting of all, perhaps, numerous obliterated collateral branches enlarged and passing over different parts of the aneurismal sac.

Hunter's success in this case encouraged other surgeons to adopt his method, and in the ten succeeding years many similar cases were reported,—several successful, but some fatal. Surgeons came to feel that Hunter's method was a great advance on anything hitherto known, but they recognized that it had its limitations. The French surgeon, Deschamps, writing in 1797, records a number of valuable observations upon Anel's and Hunter's methods. He himself appears to have had unusual opportunities of seeing cases of aneurism, and he felt that upon the whole Hunter's plan was much the most satisfactory; for he writes, "We have had in Paris four cases in which the femoral artery was ligatured in the middle of the thigh for popliteal aneurism. Of these four operations one only, that by Chopart, has been followed by mortification of the leg." Deschamps appreciated that Hunter's operation gives less opportunity for collateral anastomosis than does the lower operation, but he felt that the lessened chances of infection, by Hunter's method, offset the other advantages of ligature close to the aneurism.

It is needless to pursue the discussion further, or to follow the literature through the century following Hunter's demonstration. After the first outburst of enthusiasm surgeons again became skeptical and conservative. Hunter's operation continued in vogue, though many of the older nonoperative methods constantly were employed. At one time in Scotland and England there was a revival of the Antyllian method, which was practiced with enthusiasm by Syme and his followers; while even in our own time surgeons have treated aneurisms as benign tumors, and have excised them.

Boldness in tying arteries, previously thought inaccessible, was one interesting development of Hunter's teaching. During the first half of the nineteenth century many surgeons in America as well as in Europe devoted themselves to the subject of arterial ligature, with the result that an immense experience and a great new material were added. Hunter's pupil, Astley Cooper, tied many arteries for aneurism and wrote entertainingly on that theme*. In 1817 he performed his famous operation of tying the abdominal aorta, for aneurism of the common iliac. The patient died after forty hours. Valentine Mott, the eminent New York Surgeon and Cooper's pupil, was an incessant tier of arteries. Beginning with the innominate in 1818, he operated for aneurism one hundred and thirty-two times in all, that I have found recorded. Other surgeons conceived and practiced other methods in attempts to improve the treatment of aneurism. In 1760 the French surgeon, Brasdor, had introduced single ligature of the artery *beyond* the aneurism, with the notion that thus he might induce clotting in the proximal portion of the vessel. Some degree of success has attended the method in the case of innominate aneurisms otherwise inaccessible. Wardrop, in the nineteenth century, attempted to cure aneurism by ligature of one of the distal branches of the affected artery,—for example, the posterior tibial for aneurism of the popliteal; but neither Brasdor's nor Wardrop's operations found any great favor with the profession.

The introduction of aseptic surgery in the last quarter of the nineteenth century improved the conditions of operating in the field of aneurism as in all other fields; and surgeons, thus fortified, attacked the problem with renewed hope; but their results did not meet their expectations. Skepticism returned and persisted. So lately as 1886 I saw a surgeon of wide experience treat a femoral aneurism by digital compression of the artery, long continued, while he explained that this method, uncertain and frequently hazardous as it is, is less dangerous than any method of ligature. During the early years of the aseptic period, however, it was found that extirpation or excision of the aneurismal mass is less dangerous than ligature. Here are Delbet's figures, summarized by Matas: In the first three-quarters of the nineteenth century the immediate mortality following ligature of the great vessels was 18.94 percent; the mortality after extirpation, 11.32 percent. During the aseptic period from 1885 to 1895 the mortality following ligature was 8.32 percent, the mortality following extirpation, zero; but gangrene followed in 2.77 percent of these cases of extirpation.

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*Tyrrell's Cooper. Boston, 1825.

One sees then, that up to most recent times even, aneurism of the limbs was to be regarded as a most serious condition, while aneurism of the great internal arteries presented an almost hopeless problem.

Let us briefly record certain of the advances recently made, and let us note without undue complacency how American surgeons have led the way in improving and rehabilitating this most ancient branch of surgery. We need not rehearse all the work accomplished in the surgery of the vascular system during the last decade; for Matas* reviewed it in a splendid monograph little more than a year ago; but let us observe a new phase in the development of vascular surgery, and note two or three names.

Throughout surgical history and down to our own time lesions of the arteries and veins have been treated by methods intended to destroy or eliminate the affected vessels, though surgeons have always known that small punctured wounds of veins, such as are made in blood letting, heal readily without special treatment.

Now we have learned that wounded or damaged arteries and veins may be sewed up, when they will unite as readily as will wounded intestines. Indeed have we not seen the English surgeon Lambert, in the eighteenth century, restore a wounded artery by pin sutures?

Since 1895 Robert Abbé, J. B. Murphy, Rudolph Matas and Alexis Carrel in this country, with their numerous followers and disciples, have shown that arteries may become dilated, may be incised, cut across, and removed in part; while the damage so inflicted may be repaired by direct suture, by end-to-end approximation, by implantation, by anastomosis, and by closure of the intima by suture from within (aneurismorrhaphy). We are concerned however with the bearing of all this upon the aneurism problem; and we point with proper pride and honest satisfaction to the accomplishments of Matas, whose work on aneurism is the first worthy of permanent record since the days of John Hunter.

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*The Suture in the Surgery of the Vascular System; by Rudolph Matas. Printed at Montgomery, Alabama. 1906.

Matas tells the story modestly. Here is the account of his first convincing case, on which he operated nineteen years ago; and he waited fourteen years before he advocated his method finally to the surgical world.

His patient was a young negro man, twenty-eight years old, the victim of a large traumatic aneurism of the brachial artery in the middle third of the arm. At two different sittings Matas performed the operation of Antyllus, modified, tying the brachial above, and then below the sac, but without avail. Pulsation in the aneurism returned on the tenth day, after the second operation. He then decided on extirpation, cut down upon the aneurismal tumor, and opened the sac. He found the brachial artery to be fusiform and greatly dilated at the site of the injury, while the failure of his ligatures to control the vessel's pulsations was explained by the feeding of the sac through a number of dilated collateral branches from above. Unfortunately, or fortunately, the operator found that he could not proceed with extirpation of the aneurism without serious danger to the innervation of the arm. The sac was intimately adherent to surrounding structures, and the median and ulnar nerves were imbedded in its walls. Says Matas: "It instinctively occurred to me that the quickest way to secure a permanent hemostasis, without endangering any important parts, was by obliterating all the visible openings within the sac, by continued suture." He obliterated them, using a silk suture, which closed completely the thick margins of the openings; and when he removed the tourniquet not a drop of blood escaped from the sutured orifices; the hemostasis was complete. The wound healed promptly, and ten years later Matas saw the man in sound health. Pulsation in the radial artery had returned, and the patient was working at heavy labor as a plantation hand.

For twelve years Matas did not repeat this operation, though he had several opportunities to do so. In those years he turned back to the old-time methods because he shrank from employing his new and radical procedure in so grave a disease. But on two occasions the old methods failed him. Ligature and extirpation in his hands were followed by gangrene; and in one of the cases he was forced to amputate a thigh in order to save the patient's life. Nothing could be worse than that.

Beginning in 1900 he had a succession of cases in which he operated by his new method,—by suture of the aneurismal openings, and always successfully. In 1902 he reported his results. Other surgeons adopted his plan, until today nearly thirty cases have been reported, with this astonishing record: Immediate mortality, zero; percentage of subsequent gangrene, zero.

In this brief summary I may not discuss at length the details of Matas' method; but ask you to observe certain points, often misapprehended, misquoted or ignored:

The fundamental purpose in his scheme of operating in all cases is closely to suture all the arterial openings within the aneurism. Many writers have assumed that Matas plans a reconstruction of the artery out of the sac, in fusiform aneurism. He plans no such detail as part of his routine operation. He merely suggests such a step; but so far as I know he has as yet taken it in no case. That step is not necessary.

One asks, if Matas contemplates suture occlusion merely of all arteries opening into the aneurism, wherein does his method differ essentially from the method of Antyllus? It differs radically, and in this respect:—that Antyllus, by tying the main artery above and below the aneurism, left to chance the settlement of two important elements in the problem. In certain cases he ran the risk of cutting off by his ligatures small but essential collaterals, whose presence would safeguard against gangrene. On the other hand he failed to eliminate those extra arterial feeders of the aneurism, those supernumeraries, which, as well as the main artery, sometimes pour blood into the sac. Moreover a large aneurismal sac is closely adherent to surrounding structures; its walls are vascular, and carry often in their substance arterioles, veins and nerves, whose existence may be essential to the preservation of structure and function in the limb. We must not, therefore, remove the sac or any part of it. Matas explains how he folds it in upon itself and preserves it entire, as a crumpled but vital mass.

Thus all possible tissue of value is preserved; all harmful arterial streams are held in check; and every vascular avenue, which may share in bearing needed supplies of blood, is encouraged to take up its vicarious duties.

Matas' studies and his operation for aneurism furnish our latest advances in this fascinating subject. In rough and fragmentary fashion we have traced the history of this disease through many centuries. Its pathology, its characteristics, its fatal outcome, its treatment, gradually have unfolded themselves. With it are associated the names of the greatest surgeons since surgical literature began; and now in this twentieth century we see a radical and perhaps a final stride forward made in the solution of the world-old problem.

The Cleveland Medical Journal

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EDITORIAL

Plague Investigations in India

Cursory examinations of the files of the *Journal of The American Medical Association* shows that plague is endemic in India, not a week passing without the record of a certain number of deaths from that disease. The conditions of native life, notably the objections on the part of certain of the sects to the taking of any form of life, make the problem of plague prophylaxis a serious one for the Government. In recognition of this they have appointed an Advisory Committee, whose results are published in the *Journal of Hygiene*. The last issue, of some 300 pages, deals especially with the epidemiology, and has many points of interest for us on account of the constant threatening of our Western ports. Most of the work has been done on the basis of the rat infections and their bearing on the human infections. There is a most interesting series of charts of certain of the best studied villages, showing the relation of the finding of plague infected rats to the subsequent development of the human cases, and a further series showing in curves the relation of the time incidence of the two series of cases.

In general the Committee has observed that there are two main kinds of rats in Bombay, one the ordinary sewer rat, of more or less wandering habits, the other the house rat, almost a domestic pet and inclined to remain in the same place. They have noted that there are on the average twice as many fleas on the sewer rat as on the house rat, and in connection with this, that about twice as many sewer rats are found to have plague. The sewer rat epizoötic precedes the house rat epizoötic by about ten days, and in this connection it has been found that experimental exposure to infected fleas gives an incubation period of about eight days. The human epidemic follows the house rat epizoötic by about the same interval as that between the rat infections. From these observations they conclude that the prime mover in the infection is the sewer rat, and that this animal carries the infection over the less active periods; that the sewer rat is responsible for the infection of the house rat and that the latter is responsible for the human cases, though in some instances the transfer from the sewer rat to the human being may be direct, and also that the rat fleas are the carriers in practically all cases. The extirpation of all rats is a large problem, but so far as present knowledge goes, all treatment or other prophylaxis is only palliative as long as these active agents of infection are allowed to remain and multiply.

Sewage Disposal in Cleveland

It would seem that savages would scarcely pollute their drinking water with sewage. State Boards of Health recognize this elementary condition and apply it to the individual, but seem to be totally impotent when municipalities are concerned. The isolated farmer cannot turn his sewage into the stream or lake, but it seems to be quite beyond the power of State Boards of Health to prevent large cities from pouring the entire sewage of a city into a lake or river. When Cleveland proposed to build an intercepting sewer to gather up all the sewage and empty it into the lake at the eastern limits of the city, an effort was made by public-spirited citizens to prevent this pollution of the drinking water. Meetings were called and Colonel Waring was brought here from New York, and protested in a public address against such a method of sewage disposal. A commission of so-called experts was appointed, and they reported that there was a current of four miles in twenty-four hours down the lake, so that if sewage was emptied into the lake at the eastern limits of the city it would not pollute our drinking water, but would be passed on to Ashtabula, Erie and Buffalo. In order to demonstrate the truth of this proposition a great many sealed bottles were put into the lake at about the location of our present intake, and it was proposed to go down toward Buffalo and pick up these bottles later. Unfortunately, however, for the experiments, the bottles were nearly always picked up at Rocky River, showing that the current at that particular time was toward the west and not toward the east. As a matter of fact Cleveland is in a bay and there is no current, and if it were not that the prevailing winds are from the west our water would be much worse.

The present agitation for a filtration plant by the City Council seems to be ill-timed; at present the drinking water is comparatively safe, though still somewhat polluted with sewage. It would seem to be a much more rational proceeding to devise a more effective method of disposing of sewage. If it were otherwise cared for the question of filtration might be indefinitely postponed. Even though water is filtered it must leave a bad taste in the mouth to know that it is only filtered sewage.

Cities should not be permitted, any more than individuals, to menace public health by polluting sources of water supply, but as past experience has shown, local and State Boards of Health seem to be absolutely unable to control this matter; it would seem that the only solution is Federal regulation of public health as now so forcibly urged by the Committee of One Hundred of the American Association for the Advancement of Science in National Health.

New Journals

There is no better evidence of the advance in medicine than the addition to the literature of a number of new journals that are of a decidedly high character. Within a few months there have appeared the first issues of the *Archives of Internal Medicine* from the press of The American Medical Association, the *Quarterly Journal of Medicine* in the production of which Dr Osler has been so actively engaged, *The Proceedings of the Royal Society*, an organization formed by the union of a number of different medical societies in England, and *The Archives of Diagnosis* published quarterly in New York.

New Journals of State Associations are appearing from time to time, the most recent of which is the *Journal of the Indiana State Medical Association.*

The statement has been made that there are already too many medical journals and that it would be a great blessing if many of the articles contained in them had never seen the light. To some slight extent this may be true and many articles are merely a compilation and add little or nothing new to our existing knowledge, but who is to judge the worth of any particular article or of what value it may prove in the future? It may on the one hand prompt someone else to contribute an article of great merit or it may give help to some practitioner in the management of a troublesome case and in any case it will necessitate helpful study on the part of the writer. The results of many researches may seem of little use at the time but the day may come when they will furnish a cog in the mechanism that will aid materially in the solution of other problems, hence the value of placing on record the outcome of such researches even if their practical value is not apparent at the time.

Hydrotherapy

In our February issue in referring to the subject of hydrotherapy and the means for carrying it out, we made this statement, "So far as this city is concerned, if suitable facilities for carrying out such treatment already existed, the fact was unknown to many of the profession." Exception to this statement has been taken by Christian Sihler, M. D., who points to the Windsor Hydriatic Institute with which he is connected, the good results obtained there and the physicians who have referred patients to it. No reflection upon this Institute or upon any one of several others in this city was intended and we regret exceedingly if that construction has been placed upon our remarks. The statement was intended simply to point out that the profession as a whole are more or less indifferent to the results of hydrotherapy and consequently to the existing facilities, inquiry made haphazard among them tends to support this contention.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Opium Habit: In reply to a request from one of our subscribers for notes on the treatment of the opium habit, H. H. Drysdale, of this city, writes as follows: In neurologic practice the most trying and perplexing patients encountered are those that seek escape from an invincible desire for opium or its alkaloid morphin. Individuals so affected are for the most part neuropathic, emotionally unstable and hypochondriacal. They are intolerant of pain, egocentric and irascible. When the drug has once provided transient relief accompanied by a significant degree of euphoria, it becomes to many an inseparable friend, a comforter of their existence, a deity to whom incense is offered by the enslaved mind. Not a few patients gradually become habituated to the vice through the suggestion of a medical prescription given to overcome some chronic painful state. From the continued use of morphin the physical economy grows accustomed to it and when the original dose ceases to excite that inebriation of the senses, combined with pleasurable sensations, it is steadily increased. Finally the patient takes on the symptom-complex of chronic opium poisoning. The somatic manifestations of this deplorable condition depend, of course, upon the individual idiosyncrasies and the length of time the narcotic has been taken. In all cases an aversion to food occurs and gastro-intestinal disorders follow. Flatulence and attacks of diarrhea alternating with constipation are common symptoms. The circulation fails and the heart action becomes accelerated and irregular. The patient rapidly loses flesh and he appears apathetic and listless. Persistent insomnia is always a troublesome feature. Furunculosis will be observed in many cases when the drug is used hypodermically. The mentality of the victim also suffers and his personality promptly deteriorates. He loses his moral and esthetic tone and indulges in deceit and fabrications of every scope and variety. A true psychosis may develop any time. The treatment of these unfortunates demands, in the first place, all the tact, patience and ingenuity the physician can devise. The mental status of the individual as much as the physical condition from which he suffers requires the best that is within us. In very mild cases the habitue may be treated at home, secluded from his family and friends, and the responsibility of his care placed in the hands of a reliable nurse who fully appreciates that these patients will resort to all manner of subterfuge to secure the drug. In the majority of cases absolute isolation is imperative and the proper place for treatment is in the hospital. In years gone by an attempt was made to cure these afflictions by substitution and various drugs were recommended to replace the morphin. Among such were cocain, hyoscin, paraldehyde, and spartein. This plan, however, has long ago passed into the depths of oblivion, unhonored and unsung, from the fact that the use of these agents converted the individual's condition into another equally dangerous, if not worse. Another mode of treatment sometimes advocated is the sudden withdrawal of the drug. This method fortunately has met with little favor except in very mild cases. Those who have witnessed the "phenomena of abstinence" and the frightful chain of symptoms they provoke will promptly discard it. To me it appears cruel and unnecessary and for humanitarian reasons alone it should be condemned. The present recognized treatment, to which most cases are amenable, is the so-called reduction method. The results achieved in recent years have made this system the recognized procedure in our best American institutions today. The plan is as follows: When the patient is admitted to the hospital he is allowed his morphin for two or three days until he can be studied and the actual amount of his addiction determined. Two prescriptions are then dispensed. The first containing a solution of morphin of the necessary strength to be given by mouth, at regular intervals and in stated amount. It is advisable for obvious reasons to prepare this prescription in some colored vehicle, preferably some form of pepsin. The second mixture consists simply of a solution of quinin sulphate. As each dose of the first mixture is administered an equal amount of the second is added to the first bottle so that the percentage of morphin in the first is gradually lessened. In this way the patient is receiving a scientifically reduced dose of the drug. This form of medication is continued until the patient has been taking plain quinin for some time and recovery is at hand. The use of ergot hypodermically, in conjunction with this treatment, will prove efficacious in most cases. It seems to support the patient during the struggle and those who utilize it get much better and quicker results than those who do not. Various other manifestations will arise to be treated along expectant lines. After the drug has been withdrawn it is extremely essential that the patient be kept under observation for some time. He should under no circumstances be permitted to return to his previous environment or avocation, but must seek a change, particularly in the country, until he has fully regained his physical and mental integrity. It is inconsistent to consider a cure complete in less than a year, as the tendency to recurrence is so pronounced. The slightest distress or painful emotion may prove sufficient for a return of the addiction. As for prognosis, I entertain for the majority of patients a favorable outcome if the treatment I have outlined is rigorously complied with. The prognosis, of course, will be best in those cases who have used the drug for a disease that has been cured. The greater the euphoria produced by morphin, the more difficult will be the cure.

Cardiovascular Renal Disease: James Tyson, in the *American Journal of the Medical Sciences* for January, questions whether in cardiovascular renal disease we can remove the sclerosis of the vessels, overgrown connective tissue in the kidney, and the hypertrophy of the heart by drugs. He believes, however, that we may counteract their effect and perhaps retard their increase. The iodids not only have the tendency to remove overgrown connective tissue but also to act as permanent vasodilators, and he is in the habit of using the iodids with seemingly good effect. He prefers the iodid of sodium given in doses rarely large, but commonly as large as can be borne without disadvantage, never exceeding 10 grains three times a day, and frequently less, but they must be kept up continuously. With retinal symptoms he substitutes the biniodid of mercury in 1-48 to 1-24 grain doses, although, if in spite of this, the symptoms slowly grow worse, he thinks they may be retarded. Other treatment consists mainly in combating symptoms, digitalis is as a rule not indicated, and indeed may be harmful. Should the cardiac action be too powerful tincture of aconite in three to five drop doses, three times a day or oftener, will calm the unruly organ, especially if associated with rest, and a reduced amount of food. Nitroglycerin may be used under the same circumstances, or nitrite of sodium, but he does not think the nitrites as satisfactory as aconite when there is powerful cardiac action. If the case is one of primary heart disease liquids should be restricted and here too we may expect favorable action from those diuretics which in advanced renal disease are useless, namely, those of the theobromin class which act directly on the renal epithelium, and so require a certain integrity of this tissue for best results. Of these, besides theobromin and caffein, there are three, diuretin, theocin and aguin, all three being soluble compounds of theobromin. These remedies require a certain degree of integrity of the kidney and are therefore much more efficient in primary heart disease than in primary kidney disease; in fact they are of little or no use in advanced renal disease, their inertness has therefore some diagnostic value. He has long used spartein in the dropsy of Bright's disease, and while he formerly gave one-quarter of a grain as a dose, he now advises its use in larger doses, even up to three-quarters of a grain every three hours, he has never known any harmful results, and it is well borne by the stomach. He believes that the apocynum cannabinum or the Canadian hemp should have more frequent trial in these cases as its effects are frequently strikingly beneficial, although it is apt to produce vomiting as well as diuresis and purging. The "apocynin," an active principle, is less apt to disagree, and the dose is one-sixth of a grain, or several granules of this size may be given at a dose. It is most important to remember that a diuretic which answers in one case, often fails in another, and it is therefore necessary to have a full quiver of remedies to be drawn from judiciously as needed. The treatment of renal dropsy too would naturally consist in the elimination from the diet of food rich in chlorids, which enables the kidney to remove with ease those remaining in the tissues. It is advised to reduce the chlorids ingested to two or three grams daily.

Chlorosis: *Merck's Archives,* for January, calls attention to a new view of chlorosis as advanced by Warfwinger, who instead of regarding chlorosis as an undetermined form of anemia, believes it should be regarded as an essential specific disease, which is characterized by its spontaneous occurrence without any ascertainable cause. From the etiologic standpoint it must be viewed entirely apart from the usual causes of anemia, and it is also certain that the point of view that regards it as an infantile condition of the circulatory and sexual organs is untenable. He holds that it has essential features which stamp it as a disease of an infectious nature, its mild febrile course, liability to recurrence and epidemic appearance being features in point. So far as therapeutics are concerned, iron remains the sole sheet anchor, hygienic and dietetic measures being either useless or subordinate. Organic as well as inorganic iron preparations are efficacious, so long as they give the chemical iron reactions. The effects are not due to any local action in the intestine, as held by many pharmacologists, but may be obtained by hypodermic injection and by ointment applications. Those iron preparations which are in such combination as to prevent the ordinary iron reactions, he found were inefficient. The mode of action of the iron is not easy of explanation Warfwinger is of the opinion that no direct absorption into the red blood-cells takes place, but that the iron acts first as a stimulant to the blood forming cells in the marrow of the bones; that the iron ions circulating in the blood act as specific catalysators, which hinder the destructive actions of the toxins on hemoglobin formation in the red blood-cell, such hindering action being in direct proportion to the concentration of the iron ions in the circulating blood. For the quick and sure cure of chlorosis large doses of iron are best given, since such a small amount is absorbed in the intestinal canal and so many fast iron compounds are formed with the contents in the canal. Such a course of treatment should last at least six weeks, as it takes all of that time to bring about a thorough neutralization of the toxic action on the hemoglobin formation.

Pneumonia: In the *Therapeutic Gazette* for January, M. G. Cain reports having had 50 consecutive cases of pneumonia without a death, by the use of the guaiacol treatment. The remedy is rubbed into the skin and any part of the body may be selected. The abdomen absorbs the medicine more readily than the chest and this site is selected unless there is pain in the chest, when the seat of pain is chosen, as usually the inunction relieves the pain. No two applications are made in the same place. The skin is first thoroughly cleansed with soap and water, or with ether. The dose is from five to 30 minims, but the average dose is 20 minims for adults and 10 minims for a child one year of age. Children require a larger proportionate dose than adults. The drug is dropped slowly from a medicine dropper (the usual size holds about 20 minims) and rubbed in with the end of one finger, as much will be absorbed by the finger if care is not taken. It is usually all absorbed in one or two minutes. This agent acts very promptly. In about an hour the patient perspires freely, and the temperature, pulse, respiration and color of the skin commence to improve. Within six hours the temperature drops from two to four degrees, and the general symptoms are much improved. He never repeats the treatment in less than 12 hours. In some mild cases the treatment is not repeated, the temperature not rising again much above normal. The average number of treatments is between three and four. Many cases receive two applications, the initial dose being 20 minims. In fact some of the worst cases require but two applications. This treatment appears to arrest the disease in some cases, and in all to shorten its course, and render it less severe. In the greater part of the cases, physical signs have not developed very much after treatment was commenced. Dullness usually does not increase, but soon diminishes, and the sputum, if red, is apt to lose its color in a day or two. The drug does not in proper dosage unduly moderate the heart action, and while its influence upon the thermic centers explains the fall in temperature, it must also in some way affect the morbific element that maintains the disease.

Dosage: William J. Robinson, in the *Critic and Guide* for January, asserts that dosage is the bane of medicine, and while there is no such thing as a definite dose and the proper dose of a drug is that quantity which will produce the desired effect, still the average physician is too diffident or too timid to exceed the textbook dose. He instances a case in which a physician consulted him about a patient who was suffering from renal and cardiac disease. He had been giving him digitalis of course, but the patient was not improving; he was passing only 18 ounces of urine a day and was getting edematous. He advised the discontinuance of digitalis and the administration of spartein. Three days later the doctor called him up stating the spartein was not doing any good, the amount of urine was the same, etc. When asked about the dose he found the doctor was giving him but one-eighth grain three times daily. He advised the increasing of the dose to two grains three times a day, and in 24 hours the urine increased to 40 ounces, the edema began to disappear, and the improvement became remarkable all around. The patient was still taking these doses, with nothing but benefit. He advances this not as a plea for large any more than for small doses, but as a plea for effective doses. He believes in the mildest measures and in the smallest doses if they will produce results, but insists on the most heroic measures and largest doses if they become necessary. He advises the use of common sense, watching results and not being bound by the traditions of textbook doses as many of them have no scientific basis. They are simply copied from one textbook into another and from one edition to the next, without critical analysis. The proper dose is dose "enough" and only on this basis can we be of benefit to our patients.

Hemoptysis: In the *International Clinics* (Volume IV, Seventeenth Series), Albert Philip Francine believes that views on the best method of controlling hemorrhage of a pulmonary nature have, so far as drugs are concerned, undergone a change, and the attempt to control bleeding by the so-called styptics has been largely given up for physiologic and practical reasons. It is now hardly considered good practice to attempt to constrict the pulmonary vessels and capillaries, granting that certain drugs have this action, because they increase the general blood-pressure and induce a reactionary pulmonary hyperemia, which predisposes to fresh hemorrhage. In general it may be said that the principles involved are to reduce the rate of the blood-current, to increase the coagulability of the blood and to lower blood-pressure, all with a view to inducing clot formation at the local point of bleeding. It seems very doubtful if any of the drugs formerly advocated in hemoptysis, like oil of erigeron, turpentine, gallic and tannic acid, lead acetate, sesquichlorid of iron, ergot and the rest are of any service, and they have been practically discarded in this connection. The drugs at present receiving most attention for the control of pulmonary hemorrhage, and which seem on physiologic grounds to be most available, are the nitrites. Nitroglycerin, amyl and sodium nitrite have been found by those who have used them most to act quickly and powerfully. His practice has been to give one minim of the official spiritus glycerylis nitratis, immediately on the occurrence of hemorrhage, and to repeat this dose at hourly intervals, or oftener in severe cases, until its effect on the circulation was noted, or the bleeding had ceased. In severe hemorrhage he has given this dose every half hour for four or five doses, in association with general measures. When giving nitroglycerin in the dosage recommended, it is necessary to keep a strict watch; one gives it to reduce blood-pressure, and is not satisfied until this result is attained. It must be repeated frequently, the intervals between doses being gradually lengthened to two or three hours, until after the cessation of the bleeding it may be reduced to one minim four times a day. The calcium salts are probably the only and certainly the best drugs to increase the coagulability of the blood, but should not be used longer than three or four days at a time.

Heart Tonics: The *Journal A. M. A.* for January 11, quotes Friedlander (*Therap. Monats.*), as to the action of the various heart tonics, and the indications for their use. He defines the indications for digitalis as cardiac defects and heart weakness in young persons: for digitalis plus caffein, heart defects in older persons and extensive congestions: for strophanthus, heart defects in the aged, heart defects with asthma, dyspnea, agitation, degeneration of the myocardium, fatty degeneration and coronary sclerosis: for camphor, myodegeneration, heart weakness in cases of pulmonary affections, poverty of blood, dilatation, incipient heart defect and collapse: for caffein, aortic stenosis, coronary sclerosis, congestions, heart weakness with pulmonary affections and collapse: and for alcohol, spasmodic contraction of the vessels and slight collapse.

Anesthesia: In the *Medical Record* for January 18, Robert Reyburn considers the prevention of death during anesthesia from ether and chloroform, as we have as yet discovered no perfect method of producing anesthesia. He believes ether to be nearly as dangerous as chloroform, he objects to every complicated apparatus and believes the drop method should always be employed. In addition to the usual reasons for fatality during anesthesia, he mentions as a result of chloroform, acute yellow atrophy of the liver. All such cases reported terminated fatally in from three to six days, and the patients were generally young and robust. It is noticeable that the operations had always been abdominal and the patients were moderately or extremely fat. Other facts suggest that an unusually fat liver is less resistant to chloroform than one less so. He summarizes the precautions in giving an anesthetic as, (1) Give the ether or chloroform drop by drop; (2) Operate rapidly, so diminishing the time of anesthesia; (3) Invert the patient in case of threatened death, preferably in the prone position; (4) Have a faradic battery ready; (5) Use artificial respiration.

Potassium Iodid: J. M Walker, in the *New York Medical Journal* for January 4, considers the use of potassium iodid in nervous and mental diseases, feeling that it is the one drug, if he were to be limited to a single one, which would accomplish the most good in this class of diseases. He treats of (1) the physiologic action and dosage not touched upon by most of the textbooks, also the method of administration, and (2) its effect and the possibility of enormous doses in mental diseases, especially those due to syphilis and alcohol. Very few, if any, of the authors of works on materia medica and therapeutics advise more than one dram doses of potassium iodid three times daily. He reports cases in which 500, 800 and even 1120 grains were given daily with benefit. He has noticed several important things about potassium iodid, namely, it is utterly impossible in most cases to give enormous doses unless the patient is on a full diet and unless the drug is given immediately after meals. He uses the saturated solution in water or given in milk, and he figures, according to Potter, that one dram of saturated solution contains 40 grains of potassium iodid, the usual method being to compute 60 grains to one dram. He has yet to find a person who was unable to take very large doses of potassium iodid. He has also noted in almost every case slight nausea and what may be called a primary eruption, principally on the chest and face: in most cases this occurs on giving from 300 to 500 grains. Both of these conditions disappear upon the dosage being increased. This seems to be the rule in nearly every instance, and he has found in a good percentage of cases of cerebral syphilis that if treatment is begun within three months after mental impairment is first noticed, the patient will invariably regain his normal mental faculties. He has had some trouble in getting the dose above 300 to 400 grains in a few cases, but only when it has been impossible to induce the patient to eat heartily. He believes too it is worth a trial in selected tuberculous cases. While there may be in the minds of some a question as to whether potassium iodid is being absorbed or merely passes directly through the bowels, he points out that absorption is evident from the steady gain of flesh, the marked improvement in the patient's mental condition as the dosage is increased, especially in the syphilitic cases, and also the urine showing the presence of iodin.

Cough: The *Medical World* for January, questions the advisability of prescribing in cough, without attempting to make a diagnosis, some form of opium which perhaps not only aggravates the cough in the end, but disorders the stomach as well, and so leaves the patient in a worse condition than when he consulted the physician. Glycerin is advised as a substitute for syrup in cough mixtures as it has in itself decided virtue in all throat and bronchial troubles. In an irritative cough from deficient secretion in the bronchial tubes, apomorphin is indicated. It promotes secretion, aids expectoration, exercises a gentle hypnotic effect and is soothing to the probably irritated nerves. It is best given in solution and in small doses, as it is not well to exceed 1-20 to 1-16 grain in the 24 hours dosage. Nux vomica is one of the most efficient of all drugs in nearly every form of cough, and has a specific action on the pneumogastric nerve. In the nervous cough and the cough of tuberculosis there is no better remedy than the diluted hydrocyanic acid in two minim doses. In the early stages of a bronchitis, in child or adult, there is no better drug than ipecac. Squill should not be prescribed at this time as it is stimulating and should be reserved for the later stages.

Academy of Medicine of Cleveland

The fifty-fifth regular meeting was held Friday, February 21, 1908, at the Cleveland Medical Library. The vice-president, L. W. Ladd, in the chair. The program was as follows:

1. Some Benign and Malignant Tumors of the Female Mammary Glands with Reference to Early Diagnosis, A. F. House. (To appear in full in this JOURNAL.) F. E. Bunts discussed the paper and exhibited two tumors of the breast removed by operation. One was an early scirrhous carcinoma with slight involvement of the axillary glands, the other was a

recurrent sarcoma of 17 years standing and had been operated on seven times. He thought carcinoma of the breast was a decidedly curable disease if surgical measures were employed at an early stage. An early diagnosis is difficult, frequently the disease is either not noticed or else considered a simple mastitis or other benign condition. Many cases are watched until the diagnosis is clear, then, too late, the surgeon is called in. In all doubtful cases an expert opinion should be obtained as early as possible if satisfactory operative results are to be expected. In closing the discussion, A. F. House referred to the difficulty in determining the involvement of the axillary glands, in many cases they are affected by the malignant process and yet are not palpable.

2. The Modern Babies' Dispensary, H. J. Gerstenberger. The object of the modern babies dispensary is to lessen infant mortality. A resume of the means which various countries—France, Germany, England, Austro-Hungary, Belgium and America have adopted to fight this scourge of civilization was given, showing that America was again one-sided and far behind in this movement. The author demonstrated, through statistics both foreign and local, the various causes of the high death-rate amongst infants. These statistics showed that it was the one-month-old, poorly situated, neglected, bottle-fed babies, especially during the summer months, who made up the bulk of the deaths occurring during the first year. The author concluded from these facts that the supplying of clean milk, even modified to suit varying ages, and in separate feeding bottles, would eliminate but one of the causes, and therefore the mortality could be reduced only by adopting other means as well. Statistics taken from the health report of Cleveland for 1907, showed 519 children as having died from gastro-intestinal diseases. If this number were subtracted from the total number of deaths of children under one year, and occurring from all causes, there still remained a râte of 136 per 1,000, which is considered higher than necessary.

To overcome this high infant mortality-rate several things are necessary: (1) Babies should have not clean cow's milk, but what they ought to get and can get in 80 to 90% of the cases, namely their own mother's breast milk, and that to be successful in this we must begin early, that is at the birth of the child, or better still before the child is born, by instructing and caring for the needy mother-to-be as is done in France and Germany. This field really belongs to the obstetrician and it is his duty to realize it. (2) We should see that "clean" cow's milk is produced for the children that really have to have this product. (3) In every case the object should be to practice prevention at the earliest possible date, through the aid of persons having both a sociologic and medical training, viz., visiting nurses. (4) The work should be directed from a dispensary under medical supervision.

The author then described an ideal institution for this work as consisting in (1) a dispensary, sociologic and medical; (2) a milk laboratory; (3) a hospital, with clinical, chemical and pathologic laboratories; (4) an isolation house; (5) branch dispensaries in the crowded districts of the suburbs and (6) convalescent houses and fresh-air camps especially during the summer.

The speaker then described the facilities of the Cleveland Babies' Dispensary, which was opened in July, 1906, and the manner in which the various parts were operated, together with the results obtained. The total mortality was 12.5% for 19 to 20 months, including two summers, although the dispensary draws most of its material from the worst district in the city and although the general mortality for the city was 18.5%. Of the above 12.5% total mortality, in 2.7% the patients died while under the care of the Babies Dispensary, whereas in 9.6% they died while under the care of outside physicians or institutions. Of 77 so-called prophylactic cases, *i. e.,* children who came to the dispensary at a comparatively early age and in normal condition, three died, and all three were under outside care, making a mortality rate of 3.8%. Of these, one baby died with cerebrospinal meningitis; one died in the care of a private physician during August, 1907, from a cause not to be ascertained; the third was a healthy breast-fed child whose mother suddenly became insane; the mother was taken to the State Hospital and the child left in the care of neighbors, the baby contracted an infectious intestinal disease and died in another institution a few days later.

The dispensary limits its work to needy people. Following this principle 17.2% of 770 patients were discharged because of their good financial circumstances and referred to their usual physicians.

3. Obscure Fever in Infancy and Early Childhood, John Lovett Morse, Harvard University Medical School. (To appear in full in the *Boston Medical and Surgical Journal.*) The paper was discussed by E. F. Cushing, who said that the problem of oral sepsis had given him trouble. In one case the appendix had been removed by a surgeon with no relief of the symptoms, later the same case had come under his notice, the child's gum became swollen and a piece of necrotic bone was discharged, after which the temperature subsided. Pyelitis was more common in children than is generally supposed, in some clinics it was the custom to give urotropin to children having continued fever without apparent cause. S. W. Kelley thought that possibly some cases of obscure fever in children were due to tuberculosis which was not sufficiently manifest to be localizable, since children who have died of other diseases sometimes show areas of healed tuberculosis which were unsuspected during life. J. J. Thomas thought it of interest that congenital lues did not cause fever. He had recently seen a two days old syphilitic infant with high temperature and no cause for the fever other than syphilis could be found, he therefore ascribed it to the lues. Intestinal toxemia may also cause continued fever, he saw one child, aged two years, with a temperature of 105° and symptoms of pneumonia, in whom the condition was simply intestinal toxemia. R. K. Updegraff asked as to the value of Calmette's ophthalmic reaction, as it had recently been tried in 50 known tuberculous cases at the City Hospital with unsatisfactory results. In closing the discussion J. L. Morse thought that the fever in J. J. Thomas' patient was probably due to sepsis of an obscure nature. The results in Calmette's test depended largely upon the tuberculin preparation and the technic. He has known of very satisfactory results having been obtained with it.

CLINICAL AND PATHOLOGICAL SECTION

The forty-eighth regular meeting was held at the Cleveland Medical Library, February 7, 1908, W G. Stern in the chair.

J. H. McHenry presented a negro who had had a chancre and bubo followed in two years by an eruption which at first sight was apparently psoriasis, although the diagnosis was in doubt. No conclusion was reached in regard to the diagnosis. The regular program was as follows:

1. Rhythmic Nystagmus and Its Relation to Diagnosis of Affections of the Inner Ear and Cerebellum, W. B. Chamberlin. Labyrinthine and cerebellar disease both produce a nystagmus of like character and differing from the nystagmus found in other conditions. This nystagmus is rhythmic,—that is successive cycles are similar but each is composed of two movements, a slow deliberate excursion and a quick, jerking return. In the common, pendulous or undulating nystagmus both movements—the excursion from and the return to any fixed marginal point—are equal both in extent and in velocity.

Rhythmic nystagmus possesses other characteristics. It is usually horizontal or rotatory in character and is increased by glance in the direction of the quick component, decreased or destroyed by glance in direction of the slow component.

A circumscribed labyrinthine suppuration causes a rhythmic nystagmus with quick component toward the side of the involved ear.

A diffuse suppuration gives a nystagmus of like characteristics but with quick component toward the side of the sound ear.

In cerebellar abscess the nystagmus is directed toward the sound ear in the overwhelming majority of cases. In a small number in which the function of the cerebellum is completely destroyed the quick component is toward the sound side.

The localization of the disease in the labyrinth or in the cerebellum can be accurately determined by turning on a revolving chair or by injecting the ear with hot or cold water.

Hot water gives nystagmus with the quick component toward the injected ear, cold water gives the reverse. Neither have any effect if the function of the labyrinth is lost, as in a diffuse suppuration.

In the discussion of this paper J. M. Ingersoll called attention to the importance of any information aiding in the diagnosis between involvement of the inner ear and cerebellum.

2. Intra-Uterine Pregnancy Indefinitely Prolonged, N. Stone Scott. (Appearing in full on page 135.) In discussing the paper S. S. Berger mentioned a case of supposed prolongation of gestation in which the true condition was probably an ovarian cyst. M. Metzenbaum reported an instance of amenorrhea continuing for 14 months after which a dead fetus was passed. N. S. Scott in closing the discussion said that after the expiration of the normal duration of pregnancy if labor does not occur the fetus usually dies and there is no further enlargement, on the contrary the size of the uterus diminishes.

3. Acute Hemorrhagic Encephalitis, C. F. Hoover. The following clinical case was reported: The patient was a man in good health who had received a rather severe electric shock. This produced no serious results at the time, but three weeks later a monoplegia of the left arm developed with atrophy of the paretic muscles and impaired sensation. His condition gradually grew worse, slight paresis of the left leg and involvement of the two lower branches of the facial nerve appeared and somnolence gradually deepened. The patient was admitted to Lakeside Hospital five weeks after the accident. The examination of the eye grounds at that time revealed nothing abnormal, but within a week there developed a marked papillitis with retinal hemorrhages. A decompressive operation was performed in the hope of relieving the condition but the patient died upon the table. An autopsy revealed two areas of softening in the motor area for the left arm and leg, and another, the size of a twenty-five cent piece, in the left temporosphenoidal lobe. No hemorrhages were found, although the histologic picture corresponded with the early stages of an acute hemorrhagic encephalitis; if the patient had lived longer they would no doubt have occurred. No similar instances of acute hemorrhagic encephalitis due to severe electric shock could be found in the literature. A number had developed in from 10 to 40 days after other forms of traumatism, in some of these instances the injury had been apparently trivial and unaccompanied by any serious symptoms at the time.

The paper was discussed by F. E. Bunts, who thought it most interesting that a slight shock from the usual current for incandescent lighting could cause death and that no lesions could be found at autopsy. The question of concussion of the brain arises in some instances of traumatism, the injury may prove fatal and yet no discoverable lesion may be apparent at autopsy. The clinical importance of death being due, in such cases, to a cerebral anemia is suggestive as similar symptoms are found in shock which really seems to be an acute cerebral anemia largely due to the determination of blood to the splanchnic area. If such a pathologic condition underlie these cases of concussion, similar treatment to that adopted in shock would seem to be indicated. I. M. Belkowsky referred to the difficulty in determining histologically the presence or absence of encephalitis and raised the question as to the possibility of the symptoms being due to embolus. D. B. Steuer also discussed the paper. In closing the discussion C. F. Hoover thought that the high subarachnoid pressure, found within an hour of the injury in one of Jellinek's cases, argued against the theory that a cerebral anemia was the causative factor. There is, of course, great difficulty in differentiating microscopically the pathologic conditions in the brain but the findings in his case agreed with those found early in reported cases of acute hemorrhagic encephalitis. An embolus would not have caused the eye changes. In death from electrocution, hemorrhages are frequently found in the floor of the third and fourth ventricles, this has been proved experimentally in animals and seen at autopsies of electrocuted criminals, the hemorrhages are not, however, necessarily the cause of death, which may have been due to cardiac inhibition, asphyxia or other causes.

EXPERIMENTAL MEDICINE SECTION

The thirty-seventh regular meeting was held Friday, February 14, 1908, at the Cleveland Medical Library. C. A. Hamann in the chair.

The program was as follows:

1. Theories of Sex Determination Resting upon a Cytologic Basis, M. W. Blackman, Ph. D. (To appear in the JOURNAL in full.) The paper was discussed by C. A. Hamann.

2. Experimental Nystagmus of Otitic Origin, with Exhibition of Cases, W. B. Chamberlin. Rhythmic nystagmus of otitic origin can be produced experimentally by the following means:

Turning the patient upon a revolving stool with his head upright gives during the turning a horizontal nystagmus with quick component in the direction of the turning. When the turning has ceased the nystagmus is reversed and the quick component is in the opposite direction from the turning. Tilting the head forward at an angle of 90° to the axis of motion gives a rotatory nystagmus, while placing it upon the right or left shoulder changes the nystagmus to vertical.

During motion, as in a railway train if the patient looks out of the window and fixes with his eyes successive objects, there is a rhythmic nystagmus with quick component in the direction of the motion.

Pressure on the head of the stapes or compression of the air in the external auditory canal in cases of labyrinthine fistula causes rhythmic nystagmus.

Injecting the ear with hot water, between 98.5 and 105°, causes a nystagmus with quick component toward the side of the injected ear. Cold water in the same ear gives opposite results, a nystagmus toward the uninjected ear. These experiments are best performed with patients having large perforation of the drum membrane or upon whom a radical mastoid operation has been performed.

Galvanic stimulation of the ear also causes a rhythmic nystagmus. If the anode is placed on the tragus while the kathode is held in the hand during the passage of 15 to 20 milliamperes of current there will occur a nystagmus whose quick component is directed from the stimulated ear. Transposing the electrodes gives opposite results, a nystagmus toward the stimulated ear.

In all the above experiments the glance must be in the direction of the quick component.

Following the paper the nystagmus produced by turning and that from injections of hot and cold water was demonstrated before the members of the section.

In discussing the paper J. M. Ingersoll showed how valuable the symptom was in locating the lesion in cerebellar or labyrinthine disease. J. R. Macleod remarked that the results of these experiments showed an agreement between the conditions of excitability for the complicated nystagmus reflex and the conditions for the simple stimulation of a muscle-nerve preparation.

COUNCIL MEETING

At the last meeting of the Council of the Academy the State Committeeman on Public Policy and Legislation made the following report on the progress, before the Ohio Legislature, of bills in which the profession are interested:

HOUSE BILL No. 879—introduced by Mr. Hill—which provides for the burial of bodies of convicts unclaimed by their friends and relatives. It appears to be a bill fathered by the Roman Catholic Church. The prisoners are converted and the Church takes charge of the unclaimed bodies which are required to be buried according to the Church rites, the expense of which is something like $10.00 each. The bill proposes that the State pay this sum. Should the bill pass, medical institutions would be deprived of legitimate dissecting material. Slight amendments to this bill, as it now reads, could make it apply to all State and County institutions. This bill should be defeated. It is supported very strongly by Senator Ward.

HOUSE BILL No. 699—introduced by Mr. Bense—which provides for the State control of water supply and the disposal of sewage, has been referred to the Committee on Sanitary Laws and Regulations. This bill will probably pass without opposition.

HOUSE BILL No. 704—introduced by Mr. Elson—A bill to regulate the practice of non-medical healing in the State of Ohio, is published in full as it is of especial interest to the profession. It is felt that this bill may require active opposition.

A BILL to regulate the practice of non-medical healing in the State of Ohio.

Be it enacted by the General Assembly of the State of Ohio:

SECTION 1. That within thirty days after the passage of this act the Governor, by and with the advice and consent of the Senate, shall appoint a state board of censors of non-medical healing, consisting of three members, one to serve for one year, one for two years, and one for three years, and the successors of each shall be appointed for three years. Any person to be eligible to appointment to membership on said Board shall be a graduate of some recognized school of non-medical healing, and shall have been actively engaged in the practice of non-medical healing in this state for at least four years immediately preceding his appointment.

SEC. 2. The members so appointed shall meet at Columbus, Ohio, within twenty days after such appointment, and, after taking an oath of office, shall organize the Board by electing a president, a secretary and a treasurer. They shall provide for a common seal, and prescribe rules governing examinations. The treasurer shall give an official bond in the sum of three thousand dollars with sureties to the approval of the Board.

SEC. 3. The Board shall hold regular meetings for the examination of applicants for certificates to practice, and for such other business as may properly come before it, on the first Monday of January, May and September of each year; and special meetings may be called by the president whenever the exigencies of the business require it.

SEC. 4. The Board shall keep a record of all its proceedings including a register of all applicants for certificates and the action of the Board on each application. The books and register of the Board shall be prima facie evidence of all matters officially recorded therein.

SEC. 5. Any person desiring to practice non-medical healing in the State of Ohio shall file with the secretary of the Board at least ten days before a regular meeting a written application on a form to be prescribed by the Board, and furnish satisfactory proof by affidavit or otherwise, that he is more than twenty-one years of age, of good moral character, and has a good common school education; and shall accompany such application by the payment of an examination and registration fee of fifteen dollars. Any applicant failing to pass the examination shall be entitled to admission to any subsequent examination without the payment of any additional fee. All fees shall be paid to the treasurer of the Board, and shall be by him turned into the state treasury to the credit of a fund which is hereby created and appropriated to the use of the State Board of Censors of Non-Medical Healing.

SEC. 6. All examinations shall be conducted under the rules of the Board, and each applicant shall be examined in anatomy, physiology, and physical diagnosis, and such other subjects as the Board may require.

SEC. 7. The Board shall issue to each applicant successfully passing the prescribed examination a certificate under the seal of the Board; and the holder of such certificate, before beginning practice, shall present the same to the probate judge of the county in which he desires to practice, for registry. The probate judge shall register such certificate in a book to be kept for that purpose. Thereupon the holder of such certificate shall be entitled to practice non-medical healing in such county, and use the title "Doctor" or "Professor" in connection with his name. Provided, that any person, after having duly applied for examination and paid the prescribed fee, shall be exempted from such examination and shall receive a certificate upon proof satisfactory to the Board that he has been actively engaged in the practice of non-medical healing in this state for at least two years next preceding the passage of this act.

SEC. 8. The Board shall revoke any certificate when it is made to appear that the holder thereof has been convicted of a felony, or is guilty of gross immorality, or is an habitual drunkard; but no certificate shall be revoked until there has been given to the holder thereof due notice and opportunity to be heard. Upon the revocation of any certificate, or upon the death of any holder of a certificate, the probate judge of the county or counties in which the same shall have been registered, shall enter in the book at the place of such registry a note of the fact.

SEC. 9. Each member of said Board shall receive as his compensation the sum of ten dollars per day for each day actually engaged in the work of the Board, together with his necessary traveling expenses. The compensation and expenses of members of said Board, and all other charges and expenses which in the opinion of the Board are necessary for the performance of their duties and the enforcement of the law, shall be paid out of the fund mentioned in section five hereof, upon warrant of the auditor of state issued upon requisition signed by the president and secretary of the Board.

SEC. 10. The term "Non-Medical Healing" in this act shall be held to mean the treatment for a fee, of any bodily injury, infirmity or disease by means other than drugs, medicines or surgery.

SEC. 11. Any person practicing non-medical healing as defined in section ten hereof, except as provided in section twelve hereof, after the first Monday in May in the year 1908, without having first complied with the provisions of sections five and seven hereof, shall be deemed guilty of a misdemeanor, and shall be fined not less than twenty dollars nor more than two hundred dollars, and shall pay the costs of prosecution.

SEC. 12. Nothing in this act shall be construed to prohibit treatment in cases of emergency, or treatment by members of the family of the patient without compensation, or treatment by any method of practitioners holding certificates to practice any branch of the healing art issued under authority of any law of this state.

HOUSE BILL No. 745—introduced by Mr. Braum—providing for County hospitals for the care and treatment of inmates of County infirmaries and other residents of the County suffering from tuberculosis. This bill has passed the house and is now in the hands of the Committee on County Affairs in the Senate. There appears to be little or no opposition to this bill.

HOUSE BILL No. 748—introduced by Mr. Adler—a bill to regulate the establishment, maintainance, and inspection of maternity boarding houses and lying-in hospitals. This splendid measure, which carries with it an aid to the more thorough registration of vital statistics, has passed both branches of the legislature and is in the hands of the Governor for signature.

HOUSE BILL No. 818—introduced by Mr. Grinnell—is a substitute for a much-desired abortion law. The Grinnell bill provides that in the prosecution of a person for violation of the provision of Section 6815, revised statutes, the dying declaration of such a woman shall be received as competent evidence subject to the same rules of evidence as are applicable to dying declarations in cases of homicide. The outcome of this measure is doubtful.

HOUSE BILL No. 1112—introduced by Mr. McFadden—to regulate the itinerant vending of medicines, nostrums, and appliances for the treatment of diseases, injury and deformity, and to provide for the licensing of vendors of the same. This measure affects the sale of remedies of which "Viavi" is a representative. It provides for a $100.00 monthly tax in each County. Opposition to this measure will be extremely active.

HOUSE BILL No. 1127—introduced by Mr. Grinnell—a bill to protect the public morals by prohibiting the giving of general publicity to methods of treatment and devices for the cure or prevention of sexual or menstrual diseases. The fight over this measure will probably be the most active of any before the legislature this session.

SENATE BILL No. 346—introduced by Mr. Schmidt—relating to the appointment of health officers under the jurisdiction of the State Board of Health—has passed the Senate and is now before the Committee on Cities in the House. It will probably become a law.

SENATE BILL No. 411—introduced by Mr. Denman—known as the Optometrists Bill—is before the Committee on Medical Jurisprudence.

SENATE BILL No. 414—introduced by Mr. Crist—which is virtually the National Pure Food Law, is receiving slight opposition but will probably be enacted.

SENATE BILL No. 443—introduced by Mr. Ward—a bill to recognize certain literary colleges, not now recognized by the State Board of Medical Examination and Registration, whose students may apply for advanced standing in medical colleges. Ostensibly this bill applies particularly to Baldwin-Wallace College, Berea, Ohio. However if the measure becomes a law the students of St. John's College, Toledo, Ohio, St. Xavier's College, Cincinnati, Ohio, and St. Ignatius' College, Cleveland, Ohio, will be eligible for advanced standing.

Senator Ward, Cuyahoga Co., has introduced a bill in the Senate which provides for the examination and registration of nurses by a committee of nurses. This bill has been referred to the Committee on Medical Colleges, of which Senator Rathburn is chairman.

The following are applicants for active membership: Frank J. Kuta, A. H. Bruening, Myer Brody, J. Ward Wickersham, Frederick Beekel, Emil H. Stone.

Book Reviews

A Treatise on Diseases of the Skin. For the use of advanced Students and Practitioners. By Henry W. Stelwagon, M. D., Ph. D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Fifth Edition, Revised. Handsome octavo of 1150 pages, with 267 text-illustrations, and 34 full-page colored and half-tone plates. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, $6.00 net; Half Morocco, $7.50 net.

This standard work is already well known to the profession and the present fifth edition brings the subject matter thoroughly up to date. It has been prepared with the view of its being specially useful to the general practitioner and therefore devotes considerable attention to the symptoms, the diagnosis and, most important from this standpoint, the treatment, which is given in considerable detail. The illustrations are both numerous and well executed and are of real value, a great consideration in such a work in which the appearance of the lesions is such an important factor in the diagnosis; not only are there numerous photographic reproductions but a large number of excellent colored plates as well.

Numerous references to the literature are given as foot notes to each page to facilitate the efforts of those who would study the matter more fully than is possible in a work of this size.

The attention given to tropical skin diseases is an important feature of this edition and is of especial value on account of the increased sphere of activity of American physicians in tropical countries.

The important subject of radiotherapy and allied forms of treatment receive due consideration, although it is impossible in this work to go into the subject very deeply; the reader, however, is referred to suitable sources of information if he wishes to pursue the subject further. The book is very well gotten up, does great credit to the publisher and deserves hearty recommendation.

Diagnostics of the Diseases of Children. By Le Grand Kerr, M. D., Professor Diseases of Children, Brooklyn Post-graduate Medical School; Pediatrist to The Swedish Hospital in Brooklyn; Attending Pediatrist to the Williamsburg Hospital, Brooklyn. Fully Illustrated. W. B. Saunders Company, 1907.

The expansion of any department of learning leads to the division of its literature into many lines dealing with its various aspects. Thus the accumulated knowledge of pediatrics has brought about the production not only of many text-books, but of their division into medical and surgical sides, and of treatises and monographs, on the therapeutics of infancy and childhood, on dietetics, on their nervous diseases, and even their neuroses, on hygiene, on diseases of the mouth in children, on diseases of their teeth, and on scores of other special subjects in the expanded department of pediatrics. It has made possible as well as necessary a book of 542 well filled pages on the diagnostics. Everybody knows diagnosis is difficult in infants and children, and all who essay it will be glad to have it elucidated as Dr Kerr has done. He has collated and arranged and grouped and contrasted the various symptoms and signs in a very convenient form for reference. He has not given differential diagnosis separately, but at once in connection with the symptom. The early diagnositics are more dwelt upon than those of the fully developed disease, and the whole work is executed in a spirit of earnest helpfulness that is commendable.

Text-Book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M. D., Emeritus Professor of Gynecology in Starling-Ohio Medical College, and sometime Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus, Ohio; Fellow of the American Association of Obstetricians and Gynecologists; Member of the American Medical Association, of the Ninth International Medical Congress, etc. Second revised edition. Illustrated with 350 engravings, a colored frontispiece, and thirteen full-page half-tone plates. 642 royal octavo pages. Extra cloth, $4.50, net; half-morocco, gilt-top, $6.00, net. Sold only by subscription. F. A. Davis Company, Publishers, 1914-16 Cherry street, Philadelphia.

This is an excellent work for the student and the general practitioner. The author has been successful in his endeavor to produce a practical work on gynecology. The subject is well presented and makes entertaining reading.

The volume consists of 642 pages with 364 illustrations, the latter include many of the writer's special instruments and many of his own cases. Seven well-written chapters are devoted to the ureters, kidneys and rectum. In so many works on this subject the medical aspect receives scant attention but here the young practitioner will find many therapeutic suggestions for use in cases in which, for any reason, surgical measures cannot be employed. One of the most attractive features is a tabulated index of regional symptoms which is especially valuable to students. The classifications are clear and simple. The manner in which he groups the different forms of ovarian cysts is especially commendable.

The author has drawn largely from his own wide experience in this field and although he has outlined his routine procedure in certain conditions, he describes in a very fair manner those used by other authorities. This is especially true in reference to the Gilliam operation for retrodisplacement of the uterus. He reports very graphically the successful removal of an ovarian cyst weighing 176 pounds.

Of the individual chapters, that on the "Clinical History of Ovarian Cysts" is one of the best. It is well illustrated and will prove a valuable aid in the differential diagnosis of these tumors. The chapters on complications following abdominal section and accidents occurring in ovariotomy are also valuable.

The Principles and Practice of Modern Otology. By John F. Barnhill, M. D., Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine; and Ernest de W. Wales, B. S., M. D., Associate Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine. Octavo of 575 pages, with 305 original illustrations, many in colors. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, $5.50 net; Half Morocco, $7.00 net.

The book has a clear and lucid style, is well written and is exceedingly readable. It is a decided compliment to the publisher's art. Not the least valuable part of the book are the illustrations. These both, from their number as well as from the exceeding care displayed in their preparation, greatly enhance the value of the text.

The authors state in their preface that in the preparation they have relied largely on personal instruction received from certain clinicians as well as on their own observation. The book certainly gives one the idea that it is a compilation,—a system minus the personal equation of individual articles, rather than the direct observation of men of wide clinical experience. For the otologist it contains little or nothing that is new, but to the general practitioner it would be of decided value in emphasizing the breadth and progress of modern otology. Few outside of the specialty have a clear conception of the marked advancement made in the treatment of aural disease within the last few years.

To several parts of the text we are forced to take exception. The method of tonsillotomy advised on page 219 is, we feel, scarcely one which would be recommended by many men at the present time, while the complete removal of the stapes in a chronic suppurative otitis given on page 361 is certainly an operation only to be mentioned to be condemned. The half-hearted recommendation given by the author, even though he warns us at the same time of its dangers, might possibly lead some, of little or no clinical judgment, to attempt this procedure. Fools might rush in where angels would fear to tread.

We are also at a loss to interpret the differential diagnosis of the various forms of otitis given on page 277. To the reviewer this is certainly a new classification and one which neither agrees with his own ideas or those expressed in the literature with which he is familiar.

The division styled "acute tubotympanic catarrh" seems rather to embrace the ordinarily designated "catarrhal ototides," mucous or serous, and that entitled "acute catarrhal otitis media" to cover that class of cases designated as "otitis simplex" in the Politzer clinic. This includes infective cases which may pass on to suppuration or heal by resolution without paracentesis or rupture.

In the concluding chapters dealing with labyrinthine disease the book is lamentably weak. The chapters are very brief and incomplete and show no conception of the present knowledge and progress in this most important field of otology.

The Practical Medicine Series, under the editorial charge of Gustavus P. Head, M. D. Volume X, Nervous and Mental Diseases, edited by Hugh T. Patrick, M. D., and Charles L. Mix, A. M., M. D. The Year Book Publishers, 40 Dearborn Street, Chicago.

There can hardly be two opinions with regard to the value of abstracts of periodic medical literature. This is one of the best of them, discriminating in substance and terse in statement. A detailed review of a series of abstracts is hardly necessary; it will be sufficient to mention the 22 pages devoted to cerebrospinal meningitis, the summary of recent opinions on the much-discussed subject of aphasia, and the review of the psychologic work that is being published in regard to dementia precox as of especial interest.

Patrick's own original contributions to neurologic literature during the year have been considerable and important. He has published an interesting account of recurring fugues, the irresistible impulses to wander that seize certain neuropathic individuals, and concludes that most of these cases are not epileptic. He reports favorably on the treatment of intractable neuralgia by injections of alcohol into the nerve-tissues, and in another paper describes several interesting disorders of sleep, including what he calls painful awakenings, and indormescent shocks, but is apparently not yet in position to suggest either the cause or a remedy for either condition.

The book is a compact, handy volume, well printed and with no more than the normal proportion of typographic errors.

Proceedings of the Royal Society of Medicine, Volume I, No. 1, November, 1907. Longmans, Green & Co., London, New York. Price of each monthly issue, $2.00.

The Royal Society was founded in June, 1907, by the amalgamation of a number of the London Medical Societies representing the various branches of medical science. The "Proceedings" will be published monthly from November to July inclusive, and will contain the papers of, and the discussions read at each of the Sections during the previous month, and will be so arranged that each Section can, if desired, be detached and bound separately at the end of the year. The first number is of a very high order of merit, not only as regards the contributions themselves, many from the pens of well-known authorities, but from the general appearance and typographic work and from the number and excellency of the illustrations. The November issue contains some 45 papers on various subjects read at the meetings of 11 of the component sections of the Society. Many of these are, of course, brief case reports with the ensuing discussion but are nevertheless of value while there are a number of more lengthy papers and addresses. To attempt to review in detail these various articles is impossible and it is difficult for one reviewer to appreciate the relative importance of papers upon such widely differing specialties. Deserving of special mention, however, is the paper of Hector Mackenzie on Pneumonia and Its Complications and that of Goldman on The Value of X-Rays in the Diagnosis of Obscure Abdominal Cases.

Diseases of the Genito-Urinary Organs of the Kidney, Robert Holmes Green, A. M., M. D., Professor of Genito-Urinary Surgery, Medical Department of Fordham University, Genito-Urinary Surgeon to the City and French Hospitals, New York City, and Harlow Brooks, A. M., M. D., Assistant Professor of Pathological Anatomy, New York and Bellevue Hospital Medical School, Visiting Physician to the City Hospital New York City. W. B. Saunders & Co., Philadelphia, Pa.

This work represents a type of medical publication that is today clogging medical literature. It is a collection of principles, incomplete and heterogeneous in the extreme. Certain conditions of frequent occurrence are passed over lightly with mere mention, others less common are elucidated to a fairly complete degree, for instance, in the prefatory note, the authors state that the work is for the benefit of the general practitioner, yet considerable space is devoted to endoscopy, cystoscopy, and the surgery of the entire genito-urinary system, a field into which the wise practitioner dare not intrude. By this we do not deny the practitioner the right to knowledge in this field but in a work, the scope of which is primarily practical, the study of these pages means a loss of time to which is added the money value of the book. The illustrations are crude, show little originality, and are poorly arranged. Typographically the work is not up to the Saunders standard.

Acknowledgements

Ohio Hospital for Epileptics, Seventeenth Annual Report.

Report of the Seventh Annual Conference of Sanitary Officers.

Six Reprints, by Isaac A. Abt, Chicago.

The Duality of Man, C. G. Savage, Nashville, Tenn.

Two reprints, by Bryan De F. Sheedy.

Public Health and Marine Hospital Service of the United States. Hygienic Laboratory Bulletin No. 41. Milk and its Relation to the Public Health, by various authors.

Proceedings of the Royal Society of Medicine, Vol. 1, No. 2. Longmans, Green & Co., New York and London.

The Cause and Prevention of Consumption, issued by the Illinois State Board of Health.

Small-Pox, its Prevention, Restriction and Suppresion, Illinois State Board of Health.

Correspondence

EDITOR CLEVELAND MEDICAL JOURNAL:

Dear Sir—In view of the fact that a considerable majority of the active members of the Ohio State Pediatric Society have recently, by letter, signified a decided preference for its affiliation with the new Section of Obstetrics and Pediatrics of the Ohio State Medical Association rather than a continued existence as an independent society, the officers feel that it would be unwise to attempt to arrange a program and futile to call a meeting of the Society at Columbus next May, as previously announced.

Acting, therefore, with the advice and approval of former officers and members of the council, the officers of the Society formally announce that there will be no meeting of the Ohio State Pediatric Society at Columbus next May.

As a Section of Obstetrics and Pediatrics of the Ohio State Medical Association is now assured, it is hoped and urged that the members of the Pediatric Society will take an active interest in its meetings and work for its success.

As Doctors Thomas and Moore have been appointed Chairman and Secretary, respectively, of the new section for the coming meeting in May, they take this opportunity of inviting the hearty cooperation of everyone interested in obstetrics and pediatrics to make the first meeting thoroughly profitable and enjoyable in every way.

It is urged that all who wish to present papers will communicate with Dr Moore at the earliest possible date. Respectfully yours,

J. J. THOMAS, President. J. M. MOORE, Secretary.

Medical News

The coming International Congress on Tuberculosis at Washington, D. C., in September, 1908, will be an unique event in the New World.

This Congress meets once in three years, it has never met in America, and after 1908 will not meet in this country for many years to come.

The Congress will put the people of this country in the relation of host to the leaders of this movement in all parts of the world. It will be a real World's Congress. It will carry on, for three weeks, public discussions of the Tuberculosis problem, led by the most eminent authorities on this subject, in this and other countries. Official delegates will be present from nearly all civilized countries. There will be a course of special lectures to which all members of the Congress and the general public are invited.

The Congress will be divided into seven sections, giving ample scope for participation of both scientific and lay members.

There will be a great Tuberculosis Exposition, in which one can see what is going on, the world around, in the campaign against Tuberculosis.

There will be Clinics and Demonstrations throughout the whole period of three weeks, giving medical and lay delegates object lessons on the causes and prevention of tuberculosis.

There will be very valuable Publications, of which the Transactions will be the most important. The transactions of the last Congress are published in three volumes. The proceedings of this Congress will require four volumes. These are free to all members of the Congress, who have paid their membership fee ($5.00).

The American membership should number ten thousand persons. There are two classes of members: Active Members, who pay a fee of $5.00; and Associate Members, who pay a fee of $2.00, and have all the privileges of membership, except the right to vote and to receive the printed volumes.

Active preparations are under way in other countries. The National Committees for France, Germany, Sweden, Austria, Holland, Greece, Bulgaria, Cuba, Venezuela, Brazil and Costa Rica have organized and have forwarded their membership lists to the Secretary-General. The French committee has a membership of over three hundred, and includes men of prominence in public life as well as in the medical profession. The committees from these various countries consist of men who are well known both at home and abroad on account of their active interest in the campaign against Tuberculosis.

The Hodgkins Fund Prize of $1,500 is offered by the Smithsonian Institution, Washington, D. C., in accordance with the following announcement: In October, 1891, Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man."

In the furtherance of the donor's wishes, the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications.

In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21 to October 12, 1908, a prize of $1,500 is offered for the best treatise that may be submitted to that Congress "On the Relation of Atmospheric Air to Tuberculosis."

The treatise may be written in English, French, German, Spanish or Italian. They will be examined and the prize awarded by a Committee appointed by the Secretary of the Smithsonian Institution in conjunction with the members of the International Congress on Tuberculosis.

The right is reserved to award no prize if in the judgment of the Committee no contribution is offered of sufficient merit to warrant such action.

The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded.

Further information, if desired by persons intending to become competitors, will be furnished on application, by Charles D. Walcott, Secretary, Smithsonian Institution.

Army Medical Corps Examinations. Preliminary examinations for appointment of Assistant Surgeons in the Army will be held on May 4 and August 3, 1908, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applicants are received, in order to lessen the traveling expenses of applicants as much as possible.

Applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the

Army Medical School, will not be examined in subjects of general preliminary education.

In order to perfect all necessary arrangements for the examinations of May 4, applications must be complete and in possession of the Surgeon General on or before April 1. Early attention is therefore enjoined upon all intending applicants.

There are at present 23 vacancies in the Medical Corps of the Army.

The Association of American Medical Colleges will hold its annual meeting in this city March 16 and 17, 1908. All those interested in medical education are cordially invited to attend and participate in the discussions. It is desired that the attendance include not only medical educators, but educators in general, members of State medical examining boards, and representatives of allied associations which discuss educational problems. All are welcome. The afternoon session on March 16 will begin at two o'clock; the program, which is as follows, should be of interest to many of the profession: The Raising of Standards, W. L. Bryan, President Indiana University; Academic Seniors in Absentia in Professional Schools, A. R. Baker, Cleveland College of Physicians and Surgeons; The Problems of the State University with Reference to the Teaching of Medicine, George H. Hoxie, University of Kansas; The Equipment of the Medical College, Fred C. Zapffe, University of Illinois. The evening session on the same day, also at the Cleveland Medical Library, will be called to order by the First Vice-President, W. F. R. Phillips, and will be presided over by the President of the Cleveland Academy of Medicine, J. B. McGee. The President of the Association, Henry B. Ward, will deliver his address. The meeting will be followed by a smoker at the club rooms of the Cleveland Medical Library, to which all physicians are cordially invited.

The Lakeside Hospital Medical Society met Wednesday, January 29, 1908. H. Robb presented a convalescent patient whose bowel had been badly perforated during operation. W. C. Gill showed a clinical case of Dermatitis Heimalis. C. E. Briggs presented a case of early Perforation of the Bowel in Typhoid Fever. C. F. Hoover showed a patient suffering from Hyperostosis Cranii Syphilitica and another with Jacksonian Epilepsy in an adult due to Cephalhematoma Interna at birth. R. W. Elliott reported a case of Fracture of the Os Calcis of both feet and exhibited radiographs, also a case of Traumatism of the Knee Joint by a needle, the latter being visible in a radiograph. A. B. Eisenbrey reported a case of Cerebral Lues with fever and exhibited specimens of renal calculi removed from a patient exhibited at the previous meeting.

The February meeting was held at the Hospital, February 26, 1908. E. H. Cox showed a case of Exstrophy of the Bladder; J. H. Beiter presented two cases of Cholecystitis with Symptoms of Intestinal Obstruction; C. L. Cummer exhibited a case of Bronchiectasis and another case of Alcoholic Neuritis with Involvement of the Meninges; A. B Eisenbrey showed a case of Pyloric Stenosis; C. W. Stone presented a case of Gout and an interesting case of Chronic Plumbism; R. H. Sunkle reported a case of Papillary Adenocarcinoma of the Ovary with exhibition of specimen; H. O. Feiss reported Four Cases of Congenital Bone Anomalies; Syndactylitis; Polydactylitis; Brachydactylitis; and Split Epiphysis of the First Phalanx of the Great Toe, radiographs of each patient were shown.

St. Alexis Hospital Medical Society met at the Hollenden, February 6, 1908. Program: Symptoms and Treatment of Nephritis, A. C. McGannon; Carbon Dioxid Snow as a Substitute for Liquid Air in Dermatology, M. Metzenbaum; Report of Cases, J. V. Kofron; Report of a Case of Atropin Poisoning and a Case of Pregnancy Complicated by Uterine Fibroids and Phthisis, J. E. Tuckerman.

The Charity Hospital Medical Society held its February meeting on Wednesday, February 12, 1908, at the hospital. Program: Presentation of Cases, E. D. Neer; Hydrotherapy, J. P. Sawyer.

The Allen Society of the W. R. U. Medical Department met February 11, 1908. The following program was presented: Life of Sir James Y. Simpson, H. A. Budd; Abdominal Pain, P. H. Kilbourne; Dislocation of the Hip Joint, Treatment, J. D. Osmond; Hemiplegia, Noah Sehr.

The Lake County Medical Society held its forty-seventh regular meeting on Monday, February 3, 1908, at the Parmly Hotel, Painesville. Program: Reports and Presentation of Cases; Miscellaneous Business; "Cancer of the Uterine Cervix," R. E. Skeel, Surgeon to Cleveland General Hospital.

W. S. Taylor, of Alliance, who has been ill, is improving.

O. E. McHenry, of Moores Run, has moved to Manchester.

Dr Mark D. Stevenson, of Akron, is ill with typhoid fever.

M. Stamm, of Fremont, recently suffered an attack of the grip.

E. W. Hill and wife, of this city, who went south early in the fall, are now in Florida.

J. N. W. Crawford, of Geneva, Switzerland, recently visited relatives at Portsmouth, Ohio.

F. Carl Felix and wife, of this city, are taking an extended trip through the South and Cuba.

O. P. Andrews, of East Liverpool, has returned from a trip to Cambridge Springs, where he went for his health.

A Charity Ball for the benefit of the free dispensary of Charity Hospital was held at the Colonial Club, February 26, 1908.

F. C. Waite, Professor of Histology at the W. R. U. Medical College, was operated upon at Charity Hospital during February and is now convalescent.

H. M. Fletcher and wife, of this city, have recently returned from their honeymoon trip to Cuba. Mrs. Fletcher was formerly Miss Cora S. Sechrist, M. D.

George M. Marshall, of Portsmouth, is at home again after taking a post-graduate course at the Manhattan Eye and Ear Hospital and the Bellevue Hospital in New York City.

The Huron Road Hospital has been figuring prominently of late in the public eye. There seems to be a feeling of great dissatisfaction on the part of many homeopathic physicians at the management of the hospital. At present an investigation is being made by the trustees of the hospital.

Beginning with the April issue "The Electro-Therapeutist," formerly published by H. C. Bennett, M. D., of Lima, Ohio, will be consolidated with Albright's Office Practitioner, Philadelphia. There will be no change in the title, policy or management of the latter Journal, the only change being an increase of the number of pages.

Members of the Ohio State Medical Association who wish to contribute papers to be read before the Dermatologic and Genito-urinary Section of the Association, at the annual meeting in Columbus, in May, 1908, are requested to send their papers to the secretary of the section, W. I. LeFevre, Rose Building, Cleveland. This should be done as soon as possible as the program is being prepared.

Deaths

Dr Baumert, an old resident of Rocky Ridge, after an illness of length, died February 13.

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Some Benign and Malignant Tumors of the Female Mammary Gland with Reference to Early Diagnosis

By A. F. HOUSE, of Cleveland, Ohio
Associate Professor of Clinical Surgery, College of Physicians and Surgeons;
Surgeon to St. Clair Hospital

The female mammary gland extends normally from the third to the sixth or seventh rib, and from the margin of the sternum to the anterior axillary line. It covers the larger part of the pectoralis major, and is easily movable on the fascia of this muscle. The skin is easily movable over the gland itself. If. however, the gland is tense, especially during lactation, the skin cannot be lifted off.

The more important of the lymphatics of the breast and overlying skin join at the inferior external margin of the breast in two or three large trunks, which pass upward and empty into the axillary glands.

A few of the small lymphatic vessels follow the perforating branches of the internal mammary artery, and communicate with the glands in the anterior mediastinum. A few also follow the intercostal vessels toward the spine. A fairly constant and very important lymphatic vessel runs from the base of the breast, perforates the pectoralis major between it and the minor, passes up along the chest wall and enters the anterior mediastinum through the second intercostal space. In very large breasts some of the lymphatics communicate across the sternum with the opposite breast. This can be said to be one of the anatomic reasons why we occasionally find cancer in both breasts.

These lymphatics are of great importance, for they are the byways by which the glands become involved, and, when palpable

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Read before the Academy of Medicine of Cleveland, February 21, 1908 in malignant growths, show conclusively that the disease has extended beyond the limits of the breast itself.

Inflammatory infections of the female breast derive their chief importance from the fact that they may eventually lead to the development of malignant disease.

Examinations of the breast for suspected tumor can be quite readily and accurately done by placing the palm of the hand upon the breast and compressing the latter organ against the thoracic wall. If the enlargement be inflammatory, nothing but a lumpy, wormy sensation will be imparted to the hand, which is due to the swollen and enlarged lactiferous ducts and acini. In detecting adhesions between the mammary gland and the pectoralis major muscle, as in carcinoma of the breast, the gland should be moved in the direction of the fibers of that muscle, for if the gland is moved in a direction across that of the fibers of the muscle, the pectoralis major will move with the gland, and we may in many instances lose an important factor in the early diagnosis of small deep seated malignant growths.

Adenoma, *per se,* is a rare form of tumor, and is usually found in healthy young women during the period from puberty to the age of 35. The tumor is generally solitary and movable. It is also hard and encapsulated, and is usually the size of a walnut. It is sometimes lobulated so that the sensation experienced in manipulating it is similar to that obtained by handling a lipoma. This is one of the benign growths that may degenerate into an epithelioma. This fact gives to the tumor a peculiar clinical significance, and it should, therefore, under all ordinary circumstances, be excised.

Adenofibroma occurs in two varieties, the solid and the cystic. In the solid variety the tumor is encapsulated, and is usually found in the superficial part of the breast, but in exceptional cases may be found in the center of the organ. The cystic variety of adenofibroma is likewise encapsulated, and the acini which are involved in the stroma of fibrous tissue are dilated so as to form cavities, which are lined by epithelium. In its growth it causes atrophy of the gland from pressure. The cystic variety occurs much later in life, usually between 35 and 50 years of age, and grows much larger than the solid variety. It may reach the weight of several pounds.

The clinical history of adenofibroma shows that sharp pain is usually absent, although an occasional sense of uneasiness often pervades the breast, and during menstruation may even amount to a darting lancinating pain. In exceptional cases the pain is described as severe by some patients, especially by those who are nervous or show an hysterical element.

The nipple is not usually retracted, although, if the adenofibroma involve the central portion of the gland, it may cause a retraction of the nipple by placing the lactiferous ducts upon the stretch. The skin is usually unchanged, unless the tumor grows rapidly and causes tension, in which case the skin may become inflamed. The lymphatics in the axilla are not, as a rule, involved. The mobility of the adenofibroma is characteristic of this particular neoplasm, since sarcoma is a fixed tumor in the gland.

The treatment of adenofibroma is purely surgical, and resolves itself into simple excision of the growth without complete removal of the mammary gland if the growth is small, encapsulated and movable, and the patient young. The tumor can and should be removed, without destroying the functional possibilities of the gland, by incising the fold of the skin joining the lower segment of the gland to the thoracic wall, then by separating the base of the gland from the pectoral fascia and then by opening the gland upon its posterior surface for enucleation of the growth. In this manner the disfigurement of a scar upon the front of the breast is avoided. This is, in many instances, an important factor in gaining the consent of a patient to operation, as a scar destroys the natural beauty of the female breast. On the other hand, if the growth becomes painful and increases in size, whether or not this is due to some slight exciting cause, such as trauma, pregnancy or lactation, it should be borne in mind that pathology is constantly demonstrating the possibility of these benign neoplasms degenerating into malignant tumors. In consideration of this knowledge, especially so in women who have passed their thirty-fifth year of age, complete removal of the breast should be advised.

Malignant tumors of the female mammary gland occur more frequently than do those of a benign character. This is an unfortunate affair and should stimulate us to be cautious and careful in our advice to a patient who presents herself with a mass in the breast.

Malignant growths constitute about 82% of all mammary tumors (Billroth). Sarcoma of the breast is not often observed. Williams found in 1081 cases of sarcoma, only 99 of the mammary gland, of which five were in males and 94 in females. Kummell, in his clinic, reports 359 tumors of the breast, of which 34 were sarcomata. Poulson reports that out of 355 tumors of the breast, 33 were sarcomata. Dennis found in 116 cases of primary neoplasm of the breast but six of sarcoma. It would appear then that sarcoma constitutes about 8% or 10% of all tumors of the mammary gland. Sarcoma may take its origin either in the connective tissue surrounding the lactiferous ducts, in which case it is called an adenosarcoma, or else in the connective tissue outside of the ducts, in which case it is called a pure or solid sarcoma. The cells of which the tumor is formed vary in their histologic structure.

Gross reports 176 sarcomata of the breast, 68% of which were spindle-cell, 27% round-cell and 5% giant-cell sarcomata. Half of the cases showed cystic degeneration. According to the same author, the spindle-cell and cystic sarcomata are found more frequently in the functionating breasts of women between the ages of 30 and 40 years. They have a tendency to recur after removal. The giant-cell and more solid sarcomata appear after the physiologic function of the breast has ceased, and are more apt to form metastases. The tumor begins as a solitary circumscribed hard mass in the breast and as a rule the central part, instead of the peripheral, is the most often affected. In many cases the upper segment of the breast and notably the upper axillary portion is frequently involved. In cystosarcoma the overlying skin is tense, thin and reddened, and may ulcerate. The overlying veins are distinctly enlarged. The nipple is flattened by the stretching of the skin over the breast, but is rarely retracted, as in carcinoma. These tumors sometimes exist as small growths for years, when they suddenly, without apparent cause, begin to increase in size until they become enormous, as in one of my cases in which the tumor weighed over 11 pounds. The axillary glands are not usually enlarged.

I believe that even the most expert clinician will but rarely be able to diagnosticate small growths as sarcoma. They may readily be confounded with fibroadenoma, cysts or carcinoma. In the fibroadenoma the tumor affects young women as a rule before the thirtieth or thirty-fifth year, whereas in cystosarcoma it is usually subsequent to this period. When the tumor is large it is always easy to make a diagnosis; the method of development, the relation of the tumor to the neighboring tissue, and the absence of pain and glandular enlargement will oftentimes enable one to make a correct differential diagnosis.

The treatment of all sarcomata, no matter what their histologic structure, should consist of complete removal of the breast. While the disease is not likely to be so widespread as in carcinoma, yet it is advisable to perform a thoroughly radical operation, as clinically it is impossible to determine whether or not the growth has broken through its capsule or adjacent structure and caused infection through the medium of the blood-vessels. A permanent cure is much more common after an operation for sarcoma of the breast than after one for carcinoma.

Carcinoma of the female breast is unfortunately one of the most frequent growths met with in that organ. It is characterized by the proliferation of epithelium beyond the physiologic limits and by destruction of tissue. The malignancy of carcinoma is due to the unlimited progressive involvement of surrounding tissues. It may attack any portion of the glandular structure, although in the majority of cases it is situated in the periphery of the gland. The reason of this is probably due to the fact that the acini are found in greater numbers in the periphery than in the central part of the gland. More than half of the cases of carcinoma of the breast occur in its upper half, and especially in the upper and outer quadrant.

The growth is devoid of a capsule and indefinitely infiltrates the entire gland. The cut section of carcinoma is usually reddish-gray or whitish and traversed by several paler and firm, net-like strands of connective tissue, between which the softer tissue is embedded.

The age at which carcinoma of the breast most often appears is between the fortieth and fiftieth year, while it is not uncommon between 30 and 40, but rare before 30 and after 70.

As regards the etiology, the primary cause of carcinoma of the breast is no more known than is that of cancer in any other part of the body. The theory that cancer is of a parasitic nature has not been proved. Not one of the cancer parasites described up to the present time has withstood scientific criticism. We know that it is possible to transfer cancer from one animal to another, yet this does not prove the infectious nature of the disease.

From the clinical point of view, the etiology of carcinoma of the breast is not uniform but depends on a variety of causes. Blows, overlactation and pre-existing mastitis, particularly when suppuration has occurred, may be considered as etiologic factors. According to statistics, heredity plays an important role considering the frequency of the disease. There is no doubt that certain families are predisposed to cancer, as every practitioner is aware. Roger Williams believes that hereditary cancer usually attacks the corresponding portion of the body. Of the physical signs, the one of most importance is the hardness of the growth. This characteristic, however, is occasionally wanting in women who have a superabundance of fat in the mamma, or in those cases in which the disease runs an unusually rapid course, as in lactation.

The tumor appears insidiously. It is painless at first and rarely assumes large dimensions. Infiltration occurs early, particularly in cases in which the fibrous tissue is less abundant. The pectoral fascia and pectoral muscle become invaded. Lymphatic glandular infection occurs early, but the enlargement may be so slight that it is impossible to detect it clinically, and even considerable enlargement of the glands may escape notice.

The glands at the free border of the pectoralis major are first affected, those in the axilla follow, and finally those above the clavicle become involved. Retraction of the nipple, according to Gross, occurs in a little over 50% of the cases of cancer of the breast. It is an important symptom, although it is not necessarily pathognomonic of carcinoma of the breast, because it is not uncommon to see the nipple retracted after interstitial mastitis when abscesses have been opened and have healed. Retraction of the nipple must therefore be considered a suggestive symptom because its absence does not necessarily exclude carcinoma.

The skin becomes involved, causing a dimpling or puckering, later a brownish or bluish appearance of the skin takes place, followed by ulceration. This destructive process may proceed rapidly in some cases; in others the growth progresses more slowly and the tumor projects above the surface, forming a fungating mass. A discharge from the nipple is of some significance, especially if it occur after the fortieth year of age. Progressive emaciation may be a marked and early feature, yet in the majority of cases this cachexia does not appear until later in the disease.

In making a diagnosis the first question to decide, when a patient presents herself with a tumor in the mammary gland, is whether it is benign or malignant. This is not always an easy matter to decide. If the patient be over 40 years of age it is always suspicious, if there be nodules that are movable in the gland, if the over-lying skin be adherent, and if there be lancinating pains, retracted nipple and enlargement of the lymphatic glands, there should be no doubt whatever as to the character of the growth.

With small tumors it is quite different. These nodules may be mistaken for a fibroadenoma, cyst or interstitial mastitis, especially so in a deep seated or retromammary tumor in a breast covered with a thick layer of adipose tissue. First we should locate the tumor, determine its size, shape, sharpness of outline, whether it is confined to the breast tissue, its mobility and sensitiveness, and whether there is any shortening of the trabeculæ from the tumor to the skin. This fact can be determined by making both breasts take the widest possible excursion under the skin on the chest wall. The slightest trace of asymmetry in the skin tug, or the faintest conceivable trace of a difference on the two sides in a minor pectoral crease may suffice for a diagnosis. True, it requires some tact and patience and the most accurate control with the opposite breast to estimate its significance as a diagnostic factor in small deep seated tumors.

We should, therefore, bear in mind that carcinoma is associated with a series of characteristic symptoms, any one of which is sufficient to attract attention, although one should be careful not to undervalue the importance of any one sign.

The prognosis of malignant growths of the breast is always unfavorable if the disease is allowed to pursue its natural course. Winiwarter, Fischer and Esmarch give the average duration of life without an operation as 22 months.

The only remedy for carcinoma of the breast is a complete removal of all infected areas. It is also important to attack the disease early, and I believe that an operation is indicated even in cases that are clinically doubtful. Surgeons are aware that the prognosis depends upon the extent of the growth. Why not, then, expose all tumors for the purpose of diagnosis when carcinoma cannot be absolutely excluded? I know of no more reason why the surgeon should hesitate to make an exploratory incision to determine the nature of a tumor of the breast than in the case of an obscure abdominal tumor. An error in this direction is far less serious to the patient than assuming a malignant tumor to be benign. The practice of many physicians in keeping a woman with a tumor of the breast, which cannot be shown to be benign, under observation for weeks or months, in prescribing ointments and counter-irritants, only to be obliged to confess finally that the growth is cancer, is inexcusable and criminal. The most favorable time for operation has passed and the chances of a cure have diminished.

The operation for carcinoma of the breast should aim at complete removal of the gland, the immediately underlying muscular parts and the glandular and fatty contents of the axilla.

The skin incision will necessarily vary with the size and location of the tumor. The technic most commonly used is that of Halsted or Warren. Whatever method of operation is adopted, the skin incision must be made wide of the diseased area, and so placed as to afford ready access to the anterior mammary region and, by extension, to the axillary, infraclavicular and subpectoral regions as well. The margins of such an extensive wound cannot be approximated. It is the custom of many surgeons to allow this wound to granulate, and to cover the granulating surface with skin grafts or to graft immediately, after the operation, the latter method being preferable when it is possible to do so. The immediate mortality following operations for carcinoma of the breast is less than 2% under strict asepsis.

The recurrence of carcinoma of the breast after the radical operation is a subject fraught with great interest. There can be no doubt that this tendency to recurrence is influenced by the time the tumor has existed, the variety of the cancer and the degree of outlying involvement. The clinical fact must ever be borne in mind that there is a zone of infection of greater or less extent which the eye cannot discern. A recurrence may be local, regionary or an internal metastasis. Ransohoff (*Annals of Surgery,* July 1907) gives the statistics from seven German clinics in which he says that local recurrence takes place in about 58% of the cases, and that of these again in 62% the recurrence appears during the first year; in 11% in the second year and only in 5% in the third year. In these percentages are included metastases in the axillary and cervical lymphatics which form but a small portion of the total number of cases. From these statistics it appears that the great preponderance of recurrences takes place in the scar or in the skin in its immediate vicinity. That after the third year freedom from local recurrence, although not assured, may at least be confidently hoped for, and that recurrences after this time become less and less frequent. In late recurrences or metastases my experience has been limited to a few cases. There may have been others of which I have no knowledge. In one case the operation consisted of wide excision of the breast without opening the axilla, as the glands were not invaded. My patient died nine years after with metastases of the liver. There was no local recurrence or glandular involvement at the time of death. In another case in which the same operation was performed as in the case just cited, the patient developed a spinal cancer two years and six months after the primary operation, and died nine months after the inception of spinal symptoms. There was no evidence of local recurrence. In another case, in which Paget's disease had existed for a long time, before she would submit to an operation, the patient died from metastases of the liver three years after a radical operation had been performed. At the time of death there was no local recurrence or glandular involvement demonstrable.

I have one case living and in perfect health 19 years after amputation of the breast with incomplete evacuation of the axilla, and three patients living and well, who were operated on, seven, eight and 10 years ago respectively. In the three latter cases the radical operation was done. It is needless to say that a microscopic examination confirmed the clinical diagnosis in all these cases. From all that can be gleaned from the literature on this subject, it unmistakably shows that the slightest delay is dangerous, and that, other things being equal, the prognosis of breast cancer is quite good if operated on in its early stages, before glandular involvement takes place.

The X-ray treatment in cases of inoperable breast cancer is said by some to retard the growth for at least a time. Some advise the use of X-rays after the radical operation, with the idea of destroying any bits of cancer which may have escaped removal. For this class of cases the exposure should be made twice a week for three or four months.

I have used the X-rays for the past two years in all cases as a postoperative prophylaxis, but the time has been too short to give any definite results.

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Theories of Sex-Determination Resting on a Cytologic Basis

By M. W. BLACKMAN, Ph. D.

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Although the question of the factors which determine sex has been one of much interest and speculation to active minds as far back as we have record, no exposition of the laws governing sex has yet been advanced which has received general

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Read before the Section of Experimental Medicine of the Academy of Medicine of Cleveland, February 14, 1908 acceptance. This, however, is due to no dearth in the number of theories, for the amount of literature on the subject is by no means small. The greater number of these theories are extremely fanciful and are based either on superstition, pure speculation or on a few hastily made observations which do not stand the test of scientific analysis.

Among these ideas the one which has received most credence both among scientific men and among the laity is the theory that sex is subject to control through the environment of the developing organism; especially through regulation of the nutrition of the mother. As has been pointed out by Castle* this theory is based upon two fallacies: (1) It is known that in animals which reproduce sometimes by parthenogenesis and sometimes by fertilized eggs, good nutrition favors parthenogenetic reproduction, while poor nutrition favors reproduction by fertilized eggs. In reproduction by parthenogenesis, as long as the nutrition remains abundant, parthenogenetic females only are produced, while the first effect of poor nutrition is the production of males and this is followed by production of fertilized eggs. "The conclusion is drawn that good nutrition favors the production of females *among animals generally,* and that poor nutrition results *in general* in the production of males. As a matter of fact, the primary effect of good nutrition in the case described is *not female production, but parthenogenesis,* and the effect of poor nutrition is, *not primarily male production,* but *reproduction* by *fertilized eggs,* in which process the production of males is necessarily involved." (2) The second fallacy relates to animals not parthenogenetic. Feeding experiments on the lower animals, especially on insects, frequently result in an excess of males when the nutrition is scanty. The mortality among the larvæ in these experiments is great and, examined critically, the experiments simply show that the females require a greater amount of food to complete their development. Excess of males because of a greater mortality among female individuals cannot be interpreted as a production of male individuals by a scanty diet. These two objections to the idea that sex may be controlled by regulating the nourishment of the embryo leave this theory practically without scientific support.

During recent years a mass of evidence has been accumulating showing that sex is inherent in the germ and is not subject to even the slightest control by environment. If sex is inherent in the germ and is independent of environment, it must be in either the spermatozöon or the ovum or both. That it is inherent in the germ and that predetermination of sex exists at least as early as the fertilized egg are propositions which are admitted quite generally both by investigators of the germ cell and by students who have attacked the problem of heredity from the more practical or experimental side. Within the last seven years, three theories have appeared which, although differing considerably in details, are, nevertheless, similar in the central assumption that sex is inherent in the germ cells and is an attribute of the chromosomes. I will present these theories briefly and attempt to point out the strong and weak points of each. In doing this I will quote the exact words of the authors as much as is possible in the limited time at my disposal.

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*Castle, W. E., 1903, The Heredity of Sex. Bull. Mus. Comp. Zöol., Harvard Coll. Vol. XL., No. 4, pp. 190-218.

The first of these to which I wish to call your attention is the theory of McClung* published in 1902 but conceived nearly two years previously. To properly understand this theory it will be necessary to review briefly the behavior of the chromatin in the germ cells. It is well known that the nucleus of the cell, whether germ cell or somatic cell, contains a substance known as chromatin. When the cell undergoes division this chromatin collects in the form of distinct bodies of a definite number for any given species of animals. During division these bodies, which represent the inheritable qualities of the cell, are divided into equal parts, so that each cell resulting from the division receives one-half of each chromosome and therefore contains the same number of chromosomes as the parent cell and exhibits the same characteristics. In order that the species shall continue to retain the same number of chromosomes from generation to generation, it is necessary that the germ cells, which unite at the time of fertilization, shall undergo a special preparation. This is spoken of as maturation, and by maturation the number of chromosomes in both the spermatozöon and ovum is reduced to one-half the number characteristic of the body cells of the parent. This is accomplished in the following manner: After the last mitosis of the spermatogonia or oogonia (that is in the grandmother cells of the mature germ elements), the chromosomes unite end to end in pairs, producing bivalent chromosomes of one-half the number previously seen in the cell. This process is known as pseudo-reduction (since there is an apparent reduction in the number of chromosomes) or synapsis. In the prophase following (first spermatocyte) these bivalent chromosomes undergo two cleavages. The first of these is longitudinal, passing through the entire length of the bivalent chromosome and dividing it into two equal (quantitative and qualitative) parts. The second is a transverse cleavage and divides the chromosomes at the point at which they previously united. By the two cell divisions which follow, these four parts are distributed one to each of the resulting cells, the result being that each of the four spermatids contains but half the number of chromosomes characteristic of the spermatogonia.

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*McClung, C. E., 1902, The Accessory Chromosome—Sex Determinant? Biol. Bull. Vol. III. pp. 43-84.

This is the process of maturation as it was supposed always to occur when McClung attacked the problem of spermatogenesis in insects. If this were universal it must necessarily be true that the number of chromosomes in a somatic cell or an unripe germ cell should be an even number. McClung, however, found that in a number of species of grasshoppers and locusts the chromosomes in the unripe germ cells of males are not of an even number and also that this odd chromosome, which he called the accessory chromosome, exhibited other characteristics which enabled him to follow it through all of the stages of spermatogenesis and observe its behavior in the various cell generations. McClung's observations were confirmed and extended in other species of insects by Sutton, Montgomery, Paulmier, de Sinéty and others, in several species of myriapods by myself, and in the spider by Wallace. In the spermatogenesis of all of these animals the behavior of the accessory chromosome is similar in all essentials. At the time of synapsis, while the other chromosomes are uniting in pairs to form the reduced number of chromosomes, the accessory retains its univalent character and by its striking difference in appearance can readily be distinguished from the other chromatic elements. It was observed, without any possibility of doubt, that in the two succeeding maturation divisions, while the other chromosomes are each divided into four parts, one part of which goes to each of the four resulting cells, the accessory chromosome is divided but once, and thus enters but two of the spermatids resulting, the other two being devoid of such an element.

Upon these observations and upon certain well known facts of biology, McClung based his theory. Briefly stated, his theory is that the accessory chromosome is the bearer of those qualities which pertain to the male organism,—that is, that an egg fertilized by a spermatozöon containing the accessory chromosome will develop into a male, while an egg which copulates with a spermatozöon having no accessory chromosome, will develop into a female. McClung says: "I have been led to this belief by the favorable response which the element makes to the theoretical requirements conceivably inherent in any structure which might function as a sex determinant. These requirements, I should consider, are that: (a) The element should be chromosmic in character and subject to the laws governing the action of such structures; (b) Since it is to determine whether the germ cells are to grow into passive, yolk laden ova or into the minute motile spermatozoa, it should be present in all the forming cells until they are definitely established in the cycle of their development; (c) As the sexes exist normally in about equal proportions, it should be present in half the mature germ cells of the sex that bears it; (d) Such disposition of the elements in the two forms of germ cells, paternal and maternal, should be made as to admit of the readiest response to the demands of environment regarding the proportion of the sexes; (e) It should show variations in structure in accordance with the variations of the sex potentiality observable in different species; (f) In parthenogenesis its function would be assumed by the elements of a certain polar body. It is conceivable in this regard that another form of polar body might functionate as the non-determinant bearing germ cell."

At least two of these reasons of McClung's seem to be based upon faulty reasoning—namely, his points (b) and (f). If the presence of the accessory in the fertilizing spermatozöon determines that the egg fertilized shall develop into a male and its absence that the resulting embryo shall be a female, how can it be present in all of the cells "until they are definitely established as elements of either an ovary or of a testis"; and again, how could it possibly be present in any of the polar bodies of a parthenogenetic egg? In spite of these objections, however, McClung's accessory chromosome answers in such a beautiful manner the requirements of a sex determinant in cases of ordinary bisexual reproduction that it has received much attention among cytologists, and has acted as the stimulus of the researches of Wilson and others. A few years after McClung's paper appeared, his theory received very strong support through the discovery by Sutton that the follicular cells and ovogonia of Brachystola contain one less chromosome than do the male cells of the same species, the extra chromosome in the male being the accessory chromosome. This would seem nearly to amount to a demonstration that McClung's hypothesis is correct in this group of animals at least. However, later researches by Wilson upon other forms cast doubt upon the accuracy of this observation of Sutton.

This leads us to a discussion of Wilson's* observations, and his ideas of sex determination deduced from them. Wilson's conclusions are based upon the study of the chromosome groups of a large number of Hemipteran species. His observations are more conclusive than those of McClung's, because he studied the chromosome groups in the female germ cell as well as in that of the male. He found that in some species the chromosome number is the same for both sexes, while in other species the number is constantly one fewer in the one sex. But contrary to McClung's hypothesis and Sutton's observations on the grasshopper, in Hemiptera in which the number of the chromosomes in the two sexes differ, the number in the male cells is not one greater but one fewer than in the female. Thus, if there is any truth in McClung's main contention, that the accessory chromosome is a sex determinant, it is not the presence of this element in the germ cell which determines the "maleness" of the individual, but the absence of its mate. In other words, an egg fertilized by a spermatozöon containing the accessory chromosome, develops into a female, while an egg fertilized by one not having the accessory, produces a male.

Thus, letting N equal the normal number of somatic chromosomes:

$$\text{``Egg}\frac{N}{2}+\text{Sp'zöon}\frac{N}{2}\text{(including accessory)}=N\text{ (female)}$$

$$\text{Egg}\frac{N}{2}+\text{Sp'zöon}\frac{N}{2}-1\text{ (accessory lacking)}=N-1\text{ (male)''}$$

In several other genera of Hemiptera, Wilson found that in the male cells the accessory chromosome was associated with another much smaller rudimentary chromosome, with which it united at the time of synapsis. These he speaks of as the idiochromosomes. In these genera the female cells possess two idiochromosomes of equal size. Thus, "In the second type the male has the same number of chromosomes as the female, but possesses one large and one small idiochromosome, while the female possesses two large ones.

Designating the large idiochromosome as "I," and the small one as "i," the relations in fertilization and sex-production are as follows:

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*Wilson, E. B., 1906, The Sexual Differences of the Chromosome Groups in Hemiptera, with some Considerations on the Determination and Inheritance of Sex. Journ. Exper. Zöol., Vol. III, pp. 1-40.

"Egg $\frac{N}{2}$ (including I)+Sp'zöon $\frac{N}{2}$ (including I)=N (includingII) (female)

Egg $\frac{N}{2}$ (including I)+Sp'zöon $\frac{N}{2}$ (including i)=N (including Ii) (male)"

In one genus Wilson found still another condition of the chromosomes. In this type "the idiochromosomes are of equal size in both sexes, and no visible differences exist between the two classes of spermatozoa, or the somatic groups of the two sexes."

"Egg $\frac{N}{2}$ +Sp'zöon $\frac{N}{2}$ =N (male or female, including in each case two equal idiochromosomes)"

The relations of the three types are represented graphically by Wilson's diagram, Fig. 1 (page 204), in which the idiochromosomes are black, and the ordinary ones, only two pairs of which are shown, are left unshaded. It will be evident from an inspection of these diagrams that the second type may readily be derived from the third by a reduction in size of one of the idiochromosomes in the male cells, and the first type derived from the second by the disappearance of the small idiochromosomes.

We will now consider Castle's* theory of sex heredity, and later discuss together his results and those of Wilson. Castle believes that sex in dioecious animals is subject to the same laws of inheritance as other characters, *i. e.,* that sex is inherited, in accordance with Mendel's law. "The basic principles of Mendel's law are two, the principle of dominance and the principle of segregation."

"(a) *The principle of dominance.* When there unite in fertilization two gametes, one of which bears one of a pair of alternative characters, while the other gamete bears the other character, it often happens that the zygote formed manifests only *one* of the two characters. This character may be called the *dominant* one. The other character becomes latent, or *recessive,* and is first seen in the next generation of offspring. For example, when white mice are crossed with wild gray mice, all the offspring are gray, that characteristic being dominant, white recessive. White mice are never obtained in the first hybrid generation, but upon breeding the primary hybrids *inter se,* both white and gray offspring are obtained approximately in the ratio, 1:3."

"(b) *The principle of segregation.* The appearance of white mice, as just described, in the second hybrid generation, follows from the principle of segregation. The primitive germ cells of the primary hybrid contain both parental characters, *D* (dominant) and *R* (recessive), but in the maturation of the germ cells the two are separated, so that the ripe germ cell (or gamete) contains either *D* or *R*, *but not both.* Accordingly there are ova, *D* and *R*, and spermatozoa, *D* and *R*. If dominants and

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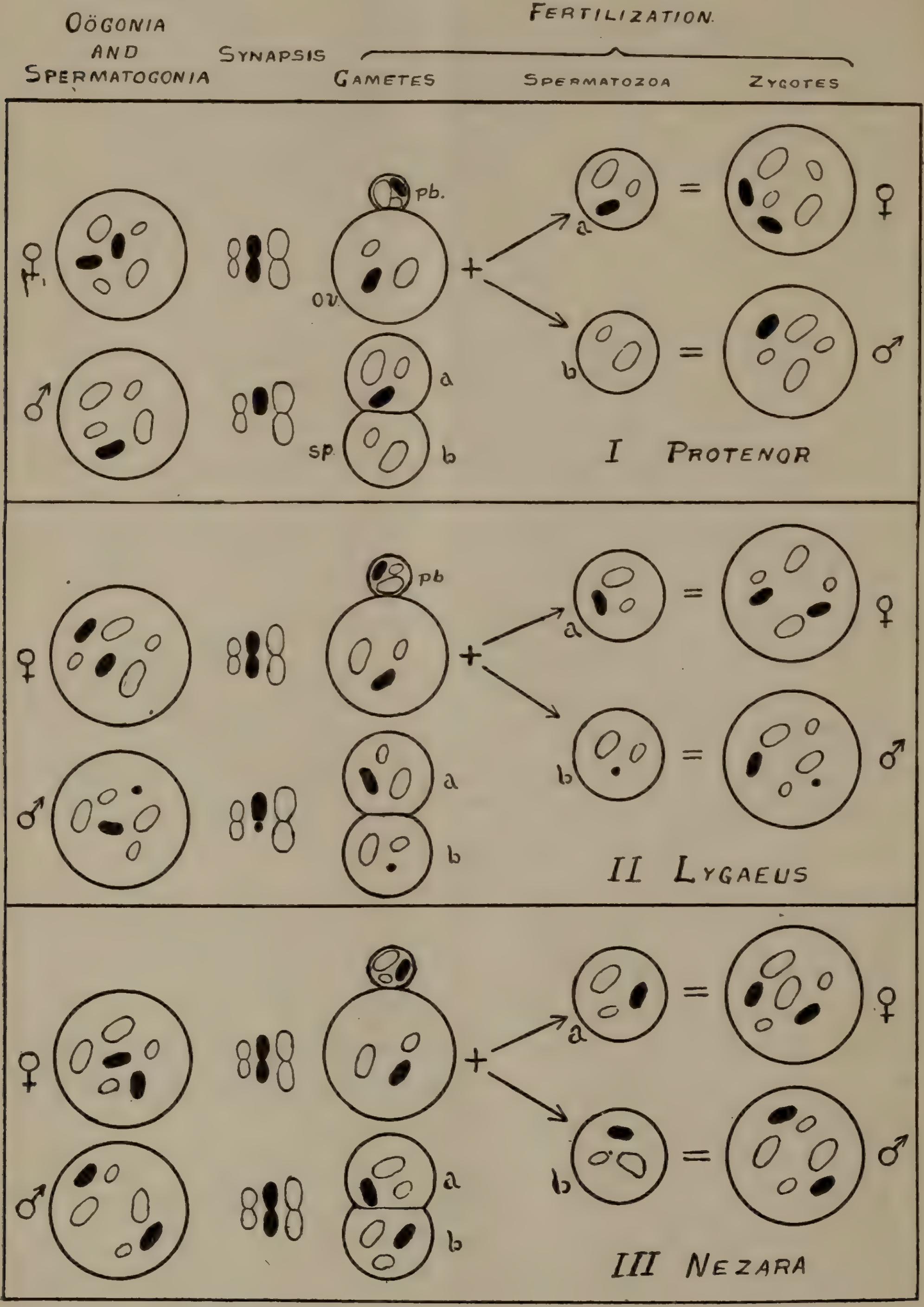
*Loc. cit.



From Wilson (06), loc. cit.

Fig. I.

recessives are produced by each parent in equal abundance, and they unite at random, the sorts of zygotes resulting and their relative frequencies of occurrence, will be expressed by the product:

$$\begin{array}{l} D + R \text{ (ova)} \\ \underline{D + R \text{ (spermatozoa)}} \\ DD + 2D\,(R) + RR \text{ (zygotes)} \end{array}$$

One individual in four will be a pure dominant, *DD* (gray in the case of mice); likewise, one in four will be pure recessive *RR* (white in mice); while two in four will be hybrids, *D(R)*, like their parents, the primary hybrids, though indistinguishable in appearance from the pure dominant, *DD*."

There is an important exception to the principles just given. Exceptional hybrid individuals sometimes occur in which the normal dominance of one character fails to be realized, but in which the two alternative characters coexist in a mosaic arrangement. Such a condition is found in spotted mice. "Segregation of characters does not commonly occur in the formation of the gametes produced by mosaic individuals," and "When two mosaic individuals are mated, they commonly produce only mosaic offspring."

According to Castle, "Sex in dioecious animals and plants is inherited in accordance with Mendel's law, *i. e.,* in accordance with the principles of dominance and segregation. The ordinary dioecious individual is a sex-hybrid—in which the characters of both sexes are present, one dominant, the other recessive. In the male, the female character is recessive, and conversely in the female, the male character, but each sex transmits the character of both."

"The existence of each sex (in a latent condition) in the other is shown by the occurrence in each sex of rudimentary organs peculiar to the other. . . . I would even go farther and say that *all* animals and plants are *potential* hermaphrodites, for *they contain the characters of both sexes,* but ordinarily the character of only one sex is developed, those of the other sex being latent, or else imperfectly developed. In true hermaphrodites, however, the characters of both sexes exist, fully developed, side by side, as do the gray and white coat colors in spotted mice. The true hermaphrodite, then, is a sex-mosaic." We have seen that in spotted mice segregation does not occur, but the color mosaic is transmitted to the offspring. Precisely the same occurs in the sex mosaic, the hermaphrodite, for when fertile hermaphrodites are bred, the young are invariably hermaphroditic.

Let us return to a consideration of the conditions in dioecious species. Here we know sex dominance occurs nearly universally, but does the principle of segregation hold, as well? If so, as can be demonstrated, half the offspring "must be *purely* of one sex or the other, that is, must contain and transmit the *characters of one sex only.*"

♂ + ♀ (ova)
♂ + ♀ (spermatozoa)
♂♂ + 2♂♀ + ♀♀ (zygotes)

However, we know that this is not the case, and that sexually pure individuals do not exist. Thus, to make Castle's theory of sex heredity valid, it is necessary to assume that an egg bearing the character of one sex can unite in fertilization only with a spermatozöon bearing the character of the *opposite* sex. This at first glance might seem a strong objection to Castle's hypothesis, yet Castle believes this assumption not so difficult after all. He says there are "strong reasons for believing that in the formation of gametes, *opposite* sex-characters are separated. Consequently, on *a priori* ground, we should expect only opposite sex-characters to unite in fertilization." Since Castle's paper appeared, a case of heredity of coat color has been reported in which such a selective fertilization did occur in hybrids of gray and yellow mice.

"On the hypothesis advanced, the zygote must, in all cases, bear both male and female characters. In the zygote of a hermaphrodite species, these two characters will exist in the balanced relationship in which they were received from the parents. But in a dioecious species the male and female characters meet anew in a struggle for supremacy at each fertilization. Sometimes one, sometimes the other, dominates in the zygote, the vanquished character being recessive."

A further objection to Castle's hypothesis, and one to which he himself called attention, is that if it be true, "it follows that half the eggs produced are infertile toward half the spermatozoa. This, however, is not so serious an objection as it may at first thought seem to be. It does not involve impotency of half the eggs and spermatoza, nor any portion of them. All the eggs of one sex will be fertile toward all the spermatozoa of the opposite sex; the remaining eggs will be fertile toward the remaining spermatozoa."

In elaborating his theory Castle takes up in detail a large number of cases of variations in the reproductive processes, and shows that they fit in very well with his theory. Indeed, the only really weak point, if it be a weak point, in his hypothesis, is the assumption of a selective fertilization, and this is by no means improbable, from recent discoveries in regard to inheritance of coat color.

In fact, on analysis a similar assumption is necessary in Wilson's hypothesis as well, for in reality the two hypotheses are very similar, except that Castle's is expressed in terms of the gametes, or germ cells, while Wilson,* by means of cytologic data, has carried the analysis back still farther, and expressed his ideas in terms of a certain pair of chromosomes contained in the germ cells.

Wilson considers the idiochromosomes as sex determinants. He says: "As a basis of discussion, the Mendelian interpretation may be taken to postulate, further, that the two sex chromosomes which couple in synapsis and are subsequently disjointed by the reducing division, are respectively male-determinants and female-determinants." The subject is best approached by a study of type I, in which the sex chromosome, the accessory, is without a mate. "The facts clearly prove that this chromosome alternates between the sexes in successive generations, passing from the male to the female in the production of females, and from the female to the male in the production of males."

As the accessory is without a mate in the male, "it must, if it be sex determinant at all, be the male-determinant, which exerts its effect uninfluenced by association with a female-determinant. But since the spermatozoa that contain this chromosome produce only females, it must be assumed that the maternal mate or fellow, with which it becomes associated on entering the egg, is a dominant female determinant. Further, since males result from fertilization by spermatozoa that do not contain the heterotropic [accessory] chromosome, the latter must, in male producing eggs, be derived from the egg nucleus. The general interpretation, therefore, must include the assumption that there are two kinds of eggs that contain respectively the male- and the female-determinant, and that the former [those containing the male determinant] are fertilized only by spermatozoa that lack the heterotropic chromosome (*i. e.,* the male determinant) and *vice versa.*"

In the second type a nearly similar result occurs. In this type the large idiochromosome, as far as sex production goes, is identical with the accessory in the first type. "The small idiochromosome may, therefore, be regarded as a disappearing or even vestigial, female-determinant that is recessive to its larger fellow (the male-determinant), and its reduction in size may plausibly be regarded as an atrophy resulting from its invariably recessive nature (this chromosome being strictly confined to the male)." Thus, just as in the case of the accessory chromosome, "the large idiochromosome of the male (male-determinant) must be derived in fertilization from the egg nucleus," and the same assumption concerning selective fertilization must hold. "In this type, accordingly, it is clear that the large idiochromosome [just as with the accessory to which it corresponds] passes alternately from one sex to the other, while the small one never enters the female."

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*Loc. cit.

In the third type, in which the idiochromosomes are of equal size, the same interpretation holds good, the relation of dominance being the same as before. The question here is merely one of selective fertilization and dominance.

Wilson also offers an alternative hypothesis, in which the assumption of selective fertilization is not necessary. He says: "It seems possible that the differential chromosomes may perform a definite and special function in sex production without being in themselves specifically male-determining and female-determining, or even qualitatively different, save in the degree of their special activity. This suggestion is given by the fact that the presence of one heterotropic [accessory] chromosome or large idiochromosome is associated with the production of a male, while if two such chromosomes are present a female is produced. This very obviously suggests that the same kind of activity that produces a male will, if reinforced or intensified, produce a female; and with this would accord the production of males from unfertilized eggs, and females from fertilized ones, in the case of the bee. In these cases the decisive factor may be merely a quantitative difference of chromatin between the two sexes."

"But it is obvious that such a difference cannot give the basis for a general explanation, since in Nezara [Type III], and presumably in many other organisms, both the number of chromosomes and the quantity of chromatin is the same in both sexes." Wilson believes the hypothesis admissible "that a physiologic or functional factor may be present that differentiates the spermatozoa into male-producing and female-producing forms, irrespective of the size of the differential chromosomes; and further, that the morphologic difference that has arisen in some forms may have been a consequence of such an antecedent functional difference. If we could assume, for instance, that the differential chromosome pair in the male includes a more active and less active member (the latter having in many cases become reduced in size, or even having entirely disappeared), the suggestion might be greatly extended in application. Under this assumption the facts might receive a general formulation in the statement that the association of two more active chromosomes of this class produces a female, while the association of a more active and a less active one (or the absence of the latter, as in the case of the heterotropic [accessory] chromosome) produces a male."

This alternative theory of Wilson's does not appear to agree so well with the known facts of sex-production as his other theory, as it is incapable of application to cases in which the sex is determined independently of fertilization—for instance, sex production in parthenogenetic and hermaphroditic forms.

In considering these two theories of Wilson's, it is worthy of note that "both assign to the differential chromosomes a specific function in sex production, both recognize the possibility of a determination of sex (as opposed to its transmission), by conditions external to the chromosome groups, and both assume, in one sex, a specific difference in the sex chromosomes, followed by a Mendelian disjunction in the formation of the gametes. It must be admitted that each interpretation involves a considerable element of conjecture, and that each includes assumptions which, without additional data, must be considered as serious difficulties. The principal one involved in the first interpretation is the assumption of selective fertilization, but if this assumption be granted, I believe that it may give an adequate solution of the problem of sex production in the sexual reproduction of dioecious organisms." The second interpretation requires an assumption rather more improbable, and does not so well fit in with all the known variations of the reproductive processes.

Further inquiry alone can tell which of these hypotheses will finally receive confirmation, but from cytologic data it seems nearly certain that one or the other is true. The validity of the data upon which they are based can hardly be assailed, as a number of other investigators working independently have confirmed these observations, and extended them to a large number of forms.

Blennorrhea of the Eye

FROM A MEDICO-SOCIAL VIEWPOINT

By JAMES STOTTER, M. D.

This paper was prepared for the meeting last August, at Cedar Point, of the Ohio State Medical Association, mainlv as a reminder, and irrespective of the diagnostic and therapeutic value of the subject, which is too well established for comment.

The severity of blennorrhea oculi may not be judged by the bacteriologic results: There are mild cases due to gonococcus infection and severe ones in which different bacilli are found to be active in the absence of gonococci. Considering the marvellous progress during the past 40 years in the therapy of the eye, it is surprising to note that v. Graefe's treatment of blennorrhea of the eye with argentum nitricum should have maintained itself in its place so steadfastly, that no matter what else may be offered, we always return to this almost classical treatment with the assurance of possessing a positive cure.

Of course, this statement is applicable mainly to blennorrhea neonatorum; in blennorrhea of the adult, while also the mainstay of rational treatment, its results are not so successful in the percent of statistics available. While a pupil of the Vienna University under Prof. Fuchs, he pointed out to me argentum nitricum as almost a specific twenty years ago, and at last accounts had not changed his opinion of its beneficent and curative influence. T. B. Holloway, of Philadelphia, states in the *Journal of the American Medical Association* that of 50 cases of blennorrhea neonatorum treated with argentum nitricum in the Philadelphia General Hospital, 44 recovered wholly, while six cases, 12%, showed complications of the cornea. Blennorrhea adultorum treated by the same means resulted in 25% of complications of the cornea—a fairly good showing when it is considered that Holloway did not select his cases. He also states in the same article that of 58 eyes affected with some kind of corneal involvement, eight were enucleated, 21 were blind or had but light perception, 10 had a moderate reduction of vision, while in 19 sight remained unimpaired or was but slightly affected. Hence, it appears that if the cornea became involved a practical loss of vision resulted in 50% of the number of eyes affected.

I beg to direct your attention to the October number of the *Ophthalmologische Klinik*, containing the report of an address

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Read before the Clinical and Pathological Section of the Cleveland Academy of Medicine, March 6, 1908 delivered by Adams before the Ophthalmological Society of Berlin, wherein he describes a new and successful therapy of blennorrhea of the adult. The treatment involves the application of a 10% bleno-lenicet salve, a preparation of finely powdered aluminum aceticum and euvaseline, which latter, not being easily soluble, protects the cornea for at least two hours, while the lenicet coagulates and greatly diminishes the secretion. Of the 12 cases reported by Adams, three showed corneal complications (one of them an ulcus corneæ with perforation) while the remaining nine healed with perfectly intact corneæ. Although having had no opportunity as yet of using this treatment, it seems worth while to try this preparation, trade-marked "made in Germany," though it be.

At the very time I received an invitation to present a paper to the Ohio State Medical Association I was treating a seven days old infant, ill of blennorrhea of both eyes, and ordinarily capable of a complete cure in about four weeks. The case was referred to me by S. E. Kaestlen, M. D., who had been called in by a west-side midwife much in demand in certain quarters. This midwife had called me some time before to see a similar case which seems to justify this paper.

The patient, a healthy, vigorous male, 4½ weeks old, presented these symptoms: Both eyes spasmodically closed; on separating the swollen and inflamed lids, a stream of yellowish-green pus was liberated, which had covered both corneæ and conjunctivæ. On wiping away the pus with a cotton tampon, the right cornea was found to be destroyed, its lower half being covered with a perforated ulcus and the iris was prolapsed; the left eye presented the same condition, barring perforation and prolapsus iridis. The midwife asserted, not without an air of authority, that for four weeks she had done everything needful for the child's eyes, even "treating them with slippery elm"; and since the people were strangers to me and apparently of the sort to whom a speculation in a malpractice suit-at-law seemed promising, I contented myself with stating that the child's right eye was destroyed and that the saving of the left was a matter of doubt, declining, however, to proceed with treatment until proper confirmation of my prognosis. An oculist having agreed with my view of the case, I proceeded with the treatment of the left eye, which responded, and in about six weeks recovered, with partial maculæ; the right eye I was obliged to enucleate.

Here I desire to mention two cases I had to operate upon, both resulting from ignorant confidence on the part of helpless mothers in the attending midwife: The first case was that of a man aged 24, blind in the left eye from birth. An examination demonstrated a deep macula corneæ, undoubtedly the sequence of unattended blennorrhea neonatorum. An iridectomy and the use of proper glasses improved vision. The other case was that of a beautiful child, aged 14, whose mother brought her to me for consultation as to the possibilities of improving the cosmetic effect of her blind right eye, having no hope of the restoration of sight. The child, according to the mother's statement, was born with a disease of the eye and the midwife syringed the eye with mother's milk and camomile tea. This eye showed a staphyloma totale conicum; and although the child was greatly inconvenienced by her inability to close the lids, etc., the mother hoped only for an improvement in the appearance of the child. Beer's operation for staphyloma resulted to the satisfaction of the patient and her mother.

No doubt there is still fresh in your memories the recent tragedy in Ravenna, O., whereby a father, driven to insanity by the blindness of his son, destroyed both the child and himself—a tragedy which, as Dr D. B. Smith informs me, may be traced directly to the consequence of an unattended or ill-attended blennorrhea neonatorum. In this instance, I am told, the person responsible was not a midwife.

It seems difficult to deal adequately with such cases of criminal neglect as this. We are ready to prosecute the Christian Scientist who assumes to cure pneumonia by prayer; we condemn the quack who advertises a cancer remedy; but we look with real or seeming indifference upon a practice which under cover of the profession increases the number of the blind by at least a third.

But what shall be said of the criminal responsibility of the midwife who not only neglects to call a physician at the first appearance of blennorrhea but even presumes to "treat" a given case for four weeks? Is this not a case for the grand jury and the criminal courts? What chance is there for the unfortunate newborn, condemned, mayhap, to go through life blind or nearly blind, if the medical profession, working and advising continuously for the welfare and health of the community, does not arouse public sentiment to this evil?

Permit me to quote some statistical data from the Vienna Polyclinic bearing on the subject. During the year 1904, the latest date available, there were treated 174 children for blennorrhea neonatorum. Not one case developed a staphyloma, not even an ulcus corneæ, and not a single enucleation was performed. Considering the state of the social evil which flourishes in Vienna as in hardly any other city on the continent, and the vast number of illegitimate births, this small number of clinical cases seems truly remarkable. If the figures mean anything, they demonstrate that not a single eye need be lost on account of this disease. At present, ignorance and criminal negligence, side by side, are responsible for the evil that stalks abroad. During the eight years of my medical studies in Vienna I recall but two adverse results of blennorrhea cases; one, *horribile dictu,* was that of a medical student who found himself too weak to resist the blandishments of night life, and its attendant cup-bearers, Bacchus and Gambrinus; the other case came under my observation during my service in the eye section of the Vienna military hospital, where a private soldier purposed the loss of eyesight in preference to compulsory service in the ranks—and he succeeded in his stubborn design.

The importance of the social side of this subject is found in the disproportionate number of children deprived, in after life, of the ordinary means of self-support, and the added burden upon the community at large. From this side there is much more to be said, which can have no proper place here, coming as it does within the province of sociology.

I have thus briefly addressed myself to the profession because there are enough of us, and we should wield influence enough, to procure the necessary legislation, remedial, restrictive and punitive. Assuredly it behooves us to inspire action in an attempt to save a third of all the men and women whose life is one unbroken night. We owe it to the community and to the commonwealth, as citizens no less than physicians.

The regulations of our Board of Health, now to be enforced by a single individual not belonging to the medical profession, as itemized in Section 23, Part 1, Title 1, define 33 communicable diseases, including anthrax, cholera, glanders, typhus, yellow fever and venereal diseases; and Section 1 of Part 3, Title 1, requires every "physician, surgeon, nurse, midwife or other person" attending any case of communicable disease to report the same to the health office under penalty of various and dire punishments. Why is blennorrhea of the eye omitted from this list? And would it not be appropriate to add a provision, such as is in vogue in many European cities, requiring any midwife noticing a redness and swelling of the eyelids of the newborn, accompanied with secretion, however slight, to call a physician *instanter* to attend the case?

The Lennox, Euclid Ave. and E. Ninth St.

Outing Work Among the Children of the Poor in Cleveland, with a Report of the Findings in the Medical Examination of 1071 Children

By JOHN PHILLIPS, M. B.

Demonstrator of Medicine, Western Reserve University: Attending Physician to the Dispensary of the Babies Dispensary and Hospital, Cleveland, O.

The problem of securing an outing during the summer months for the children of the poor, dwelling in the congested districts of large cities, occupies the attention of many charitable workers. To accomplish this efficiently and economically requires the cooperation of all the charitable organizations of a city, so that there will be no duplication of the work or useless expenditure of money.

It is necessary to investigate thoroughly the home condition of the applicants, so that attention can be given to those who are in greatest need of the outing. The children should then be examined by physicians at a central bureau or station, prior to their being sent to the country or fresh air camp, so as to exclude those afflicted with contagious diseases. Further there is the task of caring for the children at the country camp where many are collected together, or of finding suitable homes among families in the country, who are willing to take care of one, two, or three children for a short time. Such has been the work of the association of the Children's Fresh Air Camp of Cleveland during the summer.

The outing committee of the Children's Fresh Air Camp was composed of three directors of this association, and a representative of each of the following organizations: The Associated Charities, The Day Nurseries and Free Kindergarten Association, The Visiting Nurses Association and the Tuberculosis Dispensary, because the latter three are the principal feeders to the work.

It was decided that all children should be handled through the office of the Superintendent-of-outing, which was located in the building of the Associated Charities. All applications for outings were to be directed to this office and from there investigated and cared for. Here also were received reports from the families in the country who would receive children. The work of investigating these families was done principally through personal visit.

Cards for application for outing and addressed to the outing bureau were distributed in quantity to all the charitable organizations, district physicians, settlement houses, schools, churches and hospitals. As fast as applications were received they were investigated and, in their turn, with occasional exception for urgent cases, the children were assigned to the country. By this method of a central bureau all possibility of duplication was avoided.

All investigation of the families and children was performed by trained workers, in most cases by a visiting nurse. A complete sociologic record of each case was kept on a printed card bearing the headings of the features of which inquiry should be made, viz: the nationality, the home surroundings, the occupation, earning capacity, physical conditions and moral character of the parents, etc. These were filed with the physician's report of his examination. It is only by this home visitation that the urgency of the need of the child for the outing can be learned.

A strict medical examination was insisted upon within three days prior to the date of departure for the camp or country, and the results entered upon a printed card bearing the headings of the more important features to be noted, viz: age, vaccination, presence of rickets, general nutrition, glands, mentality, condition of eyes, ears, nose, throat and teeth, presence of adenoids, chest, heart, skin eruptions, previous contagious diseases, and weight. In this way uniformity of records was obtained, which would otherwise be impossible if there were a number of examining physicians. The majority of the examinations last year were made by Drs Elliott and Hutchins.

These cards were filed in numerical order. Besides this was compiled a name catalog bearing the number of the history of the case, and a diagnosis catalog, in which, under the heading of the disease, were recorded the numbers of the histories of the cases thus affected. To emphasize the value of the medical examination, it may be stated that no case of contagious disease was reported either from the camp or from the country hosts.

The children were collected at the central bureau on their return from camp or country and weighed.

The Fresh Air Camp of Cleveland is situated on a high elevation just outside the city and is easy of access by the street cars. The buildings are on a plot of ground of twenty-two acres, cut by two deep ravines and well wooded. The size of the present location allows for very great extension of the work with the growth of the city. There are at the camp three rather distinct departments, which, for the sake of convenience, may be called (1) The hospital, (2) The creepers' department, (3) The field department.

The hospital consists of one ward of twenty-three beds, in connection with the main building. Connected with the hospital ward are the necessary bath rooms and lavatory facilities and a diet kitchen for the preparation of modified milk. The hospital is devoted entirely to the care of infants suffering from malnutrition or intestinal disorders. A staff of consulting, visiting and resident physicians attend to the medical part of the work. In charge of the ward is a head nurse, who has had special training in the care of babies. To assist her are four or five trained nurses, and in addition three to five helpers. The resident doctors and most of the other people associated with the camp work sleep in tents.

To the creepers' department belongs a class of children from one and a half to three and a half years old, who can toddle about, but are not old enough or sufficiently strong to be allowed to run with the older children. There is a separate cottage for these, in one end of which are twenty cots. In the middle is a large fireplace. In the other end are their little tables and chairs, where they eat; also rocking horses, toys, and other things necessary to keep them occupied during rainy weather. Connected with this single large room of the cottage are rooms for linen, etc. A sufficient number of attendants is employed to care for these children at meal time and to direct their play.

The field department is made up of the greater number of children who come to the camp. These children, ranging from four up to fourteen years of age, live in tents, placed in a row around the main building. One end of this row starts with the oldest boys, working gradually down to the youngest. Then come the youngest of the girls, working up to the oldest girls at the other end of the row. The attendants, called teachers, numbering one for every twenty children, have tents distributed along this row. They care for the children during the day, at their meals, and direct their recreation. In addition a night watchman is necessary. In each of the children's tents there are three cots, one child sleeping in each cot. Two or three tents are kept in reserve, and well isolated from the general group, for any children who show suspicious symptoms of a contagious disease.

One of the most successful innovations of the past year was a washing tent. Two troughs run the entire length of a long platform covered by a tent. Over these are two pipes with water jets at intervals of about three feet, numbering 48 in all. Nothing at the camp gave the children more thorough enjoyment than these streams of water on their heads and hands.

There is also a shelter-house which is used as a place for the children to play in wet weather. This is a wooden structure, consisting of a floor and siding about four feet high, and then open to the roof. The open part has drop canvas curtains for use in very stormy weather. Throughout the grounds are swings, hammocks and other things necessary for the amusement of the children.

In the main building, to which the hospital is connected, are the bath rooms, storage rooms, kitchen, dining room and laundry. The dining room is a very large pleasant room, in which all the children eat at one time. It is very essential to have a large laundry, which should be in a separate building.

During the past year an isolated tuberculosis camp was started on a piece of land adjacent to the Fresh Air Camp. Four tents, such as are used at the Ottawa Colony in Illinois, were purchased, and two children were placed in each tent. A rough building with three compartments, one for kitchen, one for storage, and one for toilet purposes, was erected. There was a large pavilion tent in which the children could gather in rainy weather. A trained nurse and a helper took charge of the work, which was directed by a physician who visited the children as often as necessary. This work was done in cooperation with the officers of the Anti-Tuberculosis League. The value of this work was so apparent that it calls for further extension.

Many children in need of an outing were rejected because of impetigo, scabies, or other skin lesions. I think it would be a good plan to have a few isolated tents, where these children could be treated and at the same time obtain the much needed fresh air.

Last year 1096 children from the congested districts of Cleveland were given an outing. Of these 619 were sent to the Fresh Air Camp, 477 to the country. The average duration of the outing for each case was two weeks. In some cases at the recommendation of the examining physician the time was extended.

In 1042 cases, of which we have record, the ages were as follows:

Under one year	57	From 8 to 9 years	103
From 1 to 2 years	27	" 9 to 10 "	115
" 2 to 3 "	26	" 10 to 11 "	128
" 3 to 4 "	34	" 11 to 12 "	94
" 4 to 5 "	52	" 12 to 13 "	82
" 5 to 6 "	61	" 13 to 14 "	48
" 6 to 7 "	87	" 14 to 15 "	18
" 7 to 8 "	106	" 15 upwards	4

We have complete medical records of the examination of 1071 children—614 females, 457 males. From these some interesting facts were collected.

Defective teeth were found in 529 children, 52.1%, excluding the 57 children under one year of age. If careful examination had been made by a dentist undoubtedly this number would have been greatly increased. Caries of the teeth must be a powerful factor in the production of poor nutrition, and also in the causation of septic conditions elsewhere in the body. Greater attention should be paid to the care of the teeth of the children of the poor. These figures suggest strongly the advisability of dental supervision in the schools.

Various deformities were noted in 53 children. Of these scoliosis was present in 9, genu varum in 11, stoop shoulders in 10, pigeon breast in 8, funnel breast in 2, kyphosis in 2, umbilical hernia in 6, lateral compression of the wall of the thorax in 1, genu valgum in 2, depressed sternum from injury in 1. Rickets was found in 49 cases.

Enlarged glands were found in 449 children or 41.9%. 296 children or 27.6% had enlarged tonsils, 180 or 16.8% had adenoids. In 36 cases the mentality was below par. Of these, 10 had adenoids, 11 enlarged tonsils, 18 poor nutrition, 7 defective vision and 2 defective hearing. In these cases, if the physical defect was removed, the child's mental condition would quickly improve. This large percentage of relievable conditions of the eyes, ears and throat, in this large body of children of school age, is a strong argument in favor of medical supervision in the schools.

Inquiry was also made to ascertain what diseases of a contagious character the children had suffered from previously. 410 had had measles, 249 whooping cough, 106 varicella, 72 scarlet fever, 72 parotitis, 4 pneumonia, 8 smallpox, 8 typhoid and 1 meningitis.

Valvular lesions of the heart were found in 10 cases, one of these being a case of congenital cardiac disease. In 12 other children a systolic murmur was noted at the base but without any enlargement of the cardiac dulness. Physical signs of pulmonary or bronchial disease were found in 43 cases, of which 21 were suspected to be incipient cases of tuberculosis. 44 children had defective eyes, 17 defective ears. The examination of the eyes and ears was made only by inspection, so that many conditions would be overlooked. Enlarged thyroid was recorded in 38 cases. This condition is very commonly found on the southern shore of Lake Erie. 453 children were unvaccinated or at least showed no scar. This is an important observation, for it means that the chances for the spread of smallpox in this city are very good should an epidemic once get started.

When the children were weighed they were dressed in light summer clothing, so that in calculating the average weight 2 pounds were deducted for the clothing of children between 2 and 6 years of age, 3 pounds for those between 6 and 9 years, 4 pounds for those between 9 and 12 years and 4½ pounds for those over 12 years. The average weight of the children at the different ages was as follows:

2 years	22.7 lbs.	8 years	46.3 lbs.
3 "	29.05 "	9 "	50.8 "
4 "	31.9 "	10 "	55.2 "
5 "	36.6 "	11 "	59.7 "
6 "	38.4 "	12 "	68. "
7 "	44.2 "	13 "	72.5 "
		14 "	81.2 "

In 693 children we had records of the weight both on departure and on return. Of these, 612 gained a total of 1218¼ pounds—approximately an average of 2 pounds each, 47 lost 6½ pounds—an average of 1.3 pounds each, while in 34 the weight remained the same. The children looked much stronger and their color was much improved.

The improvement in health is not the only benefit that comes to the children from the outing. They learn habits of cleanliness, their tired, overworked mothers get a much needed rest, and in many cases a distinct change in the character of the child is noticed.

The Significance of the Gastric Mucus

A normal fasting stomach contains very little or no mucus, as the secretion of the latter is principally connected with the digestive period. After a test-meal, therefore, we should always find a moderate amount of mucus in the gastric contents under normal conditions, while any deficiency of it at this time must be considered abnormal.

In the February number of the *American Journal of the Medical Sciences* J. Kaufmann discusses the significance of the lack of mucus after test-meals, basing his views on the examination of several thousand cases. He has found that the amount of mucus is not proportional to the amount of gastric juice. In certain cases of achylia gastrica he found increased quantities of mucus and in others none at all. On the other hand, although cases of hyperacidity, as a rule, showed a lack of mucus, he observed cases of hyperacidity with increased mucus. The familiar symptoms of gastric irritation (burning, gnawing sensation, etc.) which usually occur in patients suffering from hyperacidity he found most pronounced in persons whose stomach contents were entirely free from mucus after a test-meal. When he found in other cases the same symptoms, with no excess of acidity, or with even subnormal acidity, together with a lack of mucus, he became convinced that the latter played a role in the etiology of the symptoms in both classes of cases. He relieved all the patients of their symptoms with silver nitrate lavage (using solutions from 1-5000 to 1-1000) and found the mucus increased after treatment, while the acidity remained the same, became lower, or at times even higher. This was further evidence that the lack of mucus accounted to some extent for the suffering, and that silver nitrate, as demonstrated by Pawlik years ago, increased the flow of gastric mucus.

No matter what the cause of the lack of mucus, whether due to diminished secretion, or whether it is dissolved or digested after secretion, Kaufmann holds that the lining of the stomach is thereby deprived of its protective agent. He believes the latter causes no symptoms if there is no gastric juice or gastric juice of low acidity, but if there is an active gastric juice or one of high acidity it will cause symptoms. He contends that the lack of mucus is one of the primary disturbances in the development of gastric ulcer, depriving the mucosa of its protection against harmful influences, particularly against the digestive activity of its own secretions. Kaufmann, while not underestimating the dietetic and medicinal treatment of simple ulcer, does believe that a treatment (silver nitrate lavage) which brings about an increase of gastric mucus helps to cure the ulcer. His findings corroborate clinically what Turck observed experimentally. The latter studied the factors concerned in the healing of artificially produced ulcers and demonstrated a great increase of mycogen cells during the process of repair.—*Medical Record,* March 28, 1908.

The Cleveland Medical Journal

CONTINUING { THE CLEVELAND MEDICAL GAZETTE and
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MONTHLY

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EDITORIAL

Bacteriology in Relation to Agriculture

Among the advances in the last few years there are many which, while they do not bear a direct relation to medicine, yet show such marked analogies to processes affecting the human body that they are of distinct value as comparisons. The problems of metabolism are among the most important at present, and the studies in the metabolism of plants have received a distinct impetus from similar research in human physiology.

Perhaps the most notable work is that done in connection with the relation of the bacteria of the soil to the development of certain species of plants. The necessity of nitrogen for the development of plants has long been known and the need has been filled in various ways, chiefly by enriching the soil with ready formed assimilable nitrogen compounds.

The supplies of these have been drawn on to such a degree that the end is in sight and some means of getting the nitrogen more or less directly must be found. Beginning about 1885 it was noted that there were certain conditions in the soil which apparently led to the direct assimilation of nitrogen from the air, and these conditions were traced down to the activities of the bacteria of the soil, to the molds on the surface and finally to the bacteria which were found in the small nodules on the roots of the Leguminosæ. The first attempts to apply the matter practically were made abroad, and a material known as "alinite" was sold, but was an absolute failure. The conditions had to be exceptional and it was necessary to have a large amount of sugar to help on the reaction. The relation of the root nodules to growth is more promising. These nodules were noted as far back as 1687 and for many years there was active discussion whether they were parasitic or not. They were thought to be food reserves, but later bacteria were discovered in them, isolated and reinoculated in pure culture, causing the original type of lesion, and thereby assuring their identity with those causing the original condition.

Experimentation was carried on and it was found that these organisms were dependent for their activity on the presence of certain chemicals, and also on weakness of the soil in assimilable nitrogen. The process appears to be a definite infection of the plant but with results favorable and along the lines of symbiosis so important in the studies of many of the human parasites. The bacteria produce a sort of viscid fluid, which is taken up and used in the plant and is apparently high in assimilable nitrogen, thus enabling the plant to grow readily in soil from which the ordinary nitrogen content has been removed artificially or in course of cultivation. The practical application is at once evident, for not only can the growth of the Leguminosæ be directly increased but an understanding of the underlying conditions makes the use of these same legumes as manure more valuable in proportion to the number of the nodules. Abroad the cultures are on a commercial basis, while here the chief distributer is the Government. Cultures are given out with careful directions, and warnings as to the character of the plants to be used and as to the means of using the cultures. A very large number have been sent out and the reports on the enclosed blanks have been sufficient in number to enable the Department to formulate percentages of the successful and unsuccessful ones, giving a large margin in favor of the process.

The whole matter from a foreign standpoint has been well summarized in recent numbers of the *Pasteur Institute Bulletin*, by Boullanger.

Comparison with the results at home indicates that the percentage of successes is greater in the United States, probably because in many of the places abroad where there has been experimentation the land has been in cultivation so long that it contains all the bacteria which it can hold, and that the reason for the depreciation of the crops is other than the lack of the nodule bacteria, while in the United States much of the land experimented with is new, and lacking in bacteria. Another point brought out by reading these foreign articles is that as usual there is a remarkable paucity of information concerning matters in scientific lines outside of France and Germany. Inasmuch as in this case, as well as others, by far the most elaborate and successful work has been done in this country, the moral becomes obvious.

The food problem is so intimately associated with the general health of the community that any advances of a scientific character based on actual facts of observation should be of general interest to us, whether we are directly connected with food production or not.

Hormones

In recent years a great deal has been said by certain members of the profession against the too frequent empiric use of drugs, and to such an extent by some that their views have received the now familiar term "Therapeutic Nihilism." The irregulars have been quick to grasp these statements and to turn them to their own advantage, so that we now have a host of "pathies" whose advocates denounce the giving of drugs as a principle, but who, we find, are very ready to make use of them if they themselves are sick.

The fact that Nature herself manufactures in the body substances which are in reality drugs was used as a text by Starling in a lecture before the Harvey Society of New York (*Journal A. M. A.*, March 14, 1908). Perhaps the best example of such action is that of secretin, which was discovered by Starling and his colleague Bayliss a year or so ago. The facts are probably familiar to our readers but are worthy of repetition. Pawlow had noted that the introduction of weak acid into the duodenum and upper part of the small intestine was followed shortly by an active secretion from the pancreas and liver. This was at first supposed to be due to nervous reflexes, but Bayliss and Starling showed that if a loop of gut were entirely isolated except for its vascular connections, introduction of acid into it produced the same result. Injection of acid into the vessels was ineffective. If the epithelium of the gut were scraped off, weak acid added to it and an extract made, injection of this extract into the circulation produced a prompt reaction and abundant secretion by the pancreas and liver. The active principle of this extract was not affected by boiling nor did it appear to be either a ferment, a proteid or an alkaloid. In short it might be considered a drug. It was called secretin and belongs to a class of substances which these workers called Hormones, the word being derived from a Greek word meaning to arouse or excite.

Further investigation has shown various such substances in certain organs of the body, and they seem to exercise a profound influence in corelating metabolism in various parts of the body.

The active principle of the medulla of the suprarenal gland is another example of such a body. It has been proved to be a substance of definite chemical composition. Genetically the medulla of the adrenal is neuroblastic and it is upon the sympathetic nervous system that the active body, adrenalin, specially exercises its effect. The effect of still simpler bodies in the stimulation of certain structures is shown by the action of carbon dioxid upon the respiratory center.

The manufacture of Hormones by other organs may be inferred, although they have not yet been actually identified or isolated. Thus the active agent of the thyroid secretion is probably one of this class. It has also been found that extracts of the tissues of fetal rabbits, if injected into virgin female rabbits, usually produce a marked hypertrophy of the mammary glands, such as would occur in a normal pregnancy.

The corpus luteum of the ovary seems to be the origin of some chemical substance which leads to the changes in the uterine mucosa which occur preparatory to menstruation and which are necessary for the implantation of the ovum. Fraenkel has contributed a very convincing article upon this subject which was mentioned editorially in this JOURNAL, January, 1905. The pursuit of further investigation into bodies of this class furnishes one of the most fertile fields for research. If these various substances can be isolated for therapeutic use, as has been done in one or two instances, we wonder what will be the attitude of the various cults who oppose the giving of drugs, they certainly cannot make use of their favorite objection that these substances are opposed to Nature's laws, because she does not employ them herself in the animal economy.

The Milk Commission Contract

A copy of the contract between the Milk Commission and the owners and producers of the certified milk and cream of this city will be found printed in full on page 239. It is hoped that all physicians interested in the problem of clean milk in the larger cities will read this, as it will demonstrate to them the extraordinary pains that are taken by the Milk Commission to secure as pure milk as possible.

The importance of a perfectly satisfactory milk supply for infant feeding is manifest, especially in the large cities in which, owing to the transportation problem, it is difficult to obtain mlk promptly from the rural dairies.

Unusual interest in this subject of pure milk has been shown of recent years by the medical profession, since it bears such a close relationship to the occurrence of disease. Thus the main object of the treatment of the Babies' Dispensary and Hospital is to see that the infants receive proper food, the mother's milk if possible, but, in default of this, clean cow's milk. This fact was emphasized by H. J. Gerstenberger in a paper read before the Academy of Medicine of Cleveland, February 21, 1908, and abstracted in the March JOURNAL, page 174. The very valuable publication of the Government, Bulletin No. 41 of the Hygienic Laboratory of the Public Health and Marine Hospital Service, "Milk and Its Relation to Public Health," has just appeared; it reviews the literature upon milk and adds much valuable new work. It is well worthy of perusal by every physician.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Graves' Disease: In the *American Journal of the Medical Sciences* for March, W. Hanna Thompson asserts that his views of the pathology of Graves' Disease as well as of its treatment are based upon therapeutics, and his final verdict is that proper medical treatment furnishes the best chances for recovery from the disease in severe cases and therefore in the milder forms. The one condition for which he would have but little hope is that in which uncontrollable vomiting and diarrhea have supervened in a patient already far gone. He has found that indulgence in butcher's meat results in injury to patients with this disease and he would as soon recommend confirmed diabetics to take all the starchy food they please as to advise the people with Graves' disease to relieve their weakness with that strengthening article roast beef. A cure of so serious a toxemia as that of Graves' disease by removing a portion only of the thyroid gland is beyond all present explanation, and can be accepted merely as an empirical fact. But it is also a fact that Graves' disease, whatever its stage or degree, can be equally benefited or cured by proper medical treatment alone. One of the important objects is to enjoin rest from muscular exertion, as muscular debility is a specific accompaniment of the affection as much so as in fever, and is no transient condition which the will power can overcome. Likewise all fatigue is to be avoided, as it is striking how soon certain nervous symptoms follow both undue muscular and mental exertion. Butcher's meat is never to be allowed, fish is less objectionable, poultry can be taken sparingly but not at night, and not more than one egg a day. The standard article is milk, which alone will cure many severe cases of Graves' disease, if taken as well nigh the only food. Fermented milk is best, but peptonized will answer; raw milk, however, is wholly indigestible in the quantities which should be taken in this disease, and if ever taken it should be half diluted with Vichy or lime water. Next to living on milk, the patient should be a vegetarian, for vegetable albumen rarely disagrees. Of the cereals oatmeal is forbidden, but individual idiosyncrasies must be respected. He recommends 30 grains of the phosphate of sodium at the beginning of each meal, a mercurial laxative twice a week, and intestinal antiseptics as sodium benzoate in 10 grain doses for months.

Grippe: Charles G. Kerley, in the *Medical Record* for February 29, considers the treatment of grippe in children and believes that the effect of the grippe bacillus upon different structures makes them peculiarly susceptible to other microorganisms, such as the pneumococcus and streptococcus. In an uncomplicated case the child should be put to bed, given a laxative, and a reduced diet ordered. For children under three years of age, one-half to one drop of tincture of aconite with two to five drops of spirits of niter is given at two hour intervals. For older children one grain of phenacetin in combination with two to three grains of salicylate of sodium or aspirin is given at two hour intervals when awake. In grip rhinitis, a combination of camphor, belladonna, Dover's powder, and aspirin is usually given. The local treatment should be of a non-irritating character. If the angina is particularly severe, a spray of peroxid of hydrogen, one-fourth strength, is used. If there is a bronchitis involving the smaller tubes, sedatives should be given sparingly. In grip bronchitis he thought he got better results when he used creosote, and in cases of tracheitis he used inhalations of moist air. Pneumonia in children with grip is usually of the bronchial type, but presents no unusual requirements as to management and the digestive disturbances differ but little from those occurring in other infectious diseases. Inspection of the ear should be practised daily. After grip a tonic is generally indicated.

Pruritus Ani: W. T. Marrs, in the *Medical Times* for March, considers the treatment of pruritus ani and in the absence of a specific cause, the treatment should be begun by keeping the bowels open with calomel and salines. There are many antipruritic remedies, but they should be well chosen, and judiciously employed, lest they produce excoriation of the cuticle. One of the best is fresh pine tar, alone, or in combination. An ointment of tar, glycerin and starch gives very gratifying results and should be applied freely and the legs kept separated with a T-bandage. This mixture not only allays the itching, but seems to exert a certain curative effect as well. He also advises a saturated solution of gum camphor in pure carbolic acid, add an equal part of alcohol and you have an application that stops the itching at once. It should be brushed lightly over the affected area and repeated as needed. In an intractable case, touch lightly a few times with a 20% solution of nitrate of silver, the burn is superficial and the nerve endings are sealed up for a time. Ointments containing carbolic acid, chloroform, etc., may usually be depended upon to give some temporary relief, but as a general rule ointments are not so satisfactory as powders and liquids. As a radical procedure divulsion of the sphincter is curative in many obstinate cases and is to be done digitally and without anesthesia. Insert both thumbs in the anus, the dorsal sides directed laterally, and apply as much force as the sphincter will seemingly tolerate. This should be done slowly and at a number of sittings. It gives new tone and life to the anus and overcomes any immediate reflex, as well as curing constipation. Anal eczema may exist without pruritus, as the itching of the anus in eczema is not invariably present, at least not always in the degree that characterizes pruritus, but the treatment may in many respects be parallel. If the skin is dry and scaly an application of tar in alcohol is very useful. Also an ointment of tar, belladonna, and carbolic acid in a lanolin base. If there is a weeping condition, powders may act kindly, as bismuth, compound stearate of zinc, starch, etc. A clean soothing antipruritic is composed of: Calomel, grains XXX; Menthol, grains XX; Vaselin, ʒ ṫ. Sig. Use as needed.

Measles: In the *Monthly Cyclopaedia of Practical Medicine* for February, Charles E. de M. Sajous states that the prevailing belief that measles is a benign disease causes textbook writers to attach very little importance to the use of remedies—a fortunate thing, for those who advocate anything give antipyretics and thus antagonize the defensive process. He asserts the value of calomel, recommended by the older practitioners, as one of the most potent stimulants of the body's protective mechanism. They used it in too large doses, however, and thus produced too active purgation, a drawback which may be avoided by giving small doses, say 1-32 grain every hour in a child one year old, six or eight times, then every three hours. A powerful adjunct, one in fact which tends greatly to limit the duration of the disease and the liability of complications, is the free use of fluids to insure copious diuresis. An important feature of the treatment is the addition of sodium chlorid to the diet. Not only does it increase the bacteriolytic and antitoxic properties of the blood, but, as shown recently by Ramus, common salt prevents the loss of weight which is often marked in this disease. It may be added to the milk, or, as recommended by Madison Taylor, the ordinary saline solution may be used as a beverage; Todd having found this mode of use as efficient as hypodermoclysis, venous infusion, etc., in febrile processes. When signs of bronchopneumonia or lobar pneumonia appear, opiates should be avoided, while creosote carbonate, three to five grains every three hours, not only relaxes the arterioles but enhances the antitoxic properties of the blood they admit into the pulmonary capillaries. Antipyretics are never indicated; the coal tar products merely obscure the superficial hyperpyrexia; the best results are obtained by cool sponging or tepid baths which facilitate the dissipation of heat from the skin. With high temperature, great restlessness and cutaneous burning, the sodium bromid or chloral hydrate relieve the intense vascular tension. During convalescence, strychnin, iron and cod liver oil are effective. He emphasizes prophylaxis and quotes Corlett that by strict quarantine the disease has been eradicated from certain communities, which have enjoyed complete immunity during long periods.

Digitalis: In the *Proceedings of the Royal Society* for January, James Mackenzie points out that there is no principle guiding the prescription of digitalis, each man being influenced by imperfect deductions drawn from experimental work joined to his own individual experience; the result being that digitalis is often prescribed in cases in which it can do no good, but happily it does little harm, as it is far from having the effect usually ascribed to it. He feels that all forms of the drug are equally effective in certain cases, and equally ineffective in others. The supposed uncertain action of the various preparations is due really to the varied lesions of the heart, certain hearts being extremely sensitive to the action of digitalis, while others are unaffected by it. In cases in which rhythm of the heart was normal it had little effect upon the rate and when there was a quickening of the heart from tuberculosis, rheumatic fever or pneumonia, no effect on the heart's rate resulted from digitalis even when pushed till sickness resulted. The cases benefited by digitalis were those in which there was dilatation of the heart. Indeed so manifest is the relationship between the beneficial effects of digitalis and dilatation of the heart, that it may be laid down as a guiding principle that digitalis is of no avail unless there is dilatation of the heart. The reason is that dilatation only occurs when there is a failure of the function of tonicity, and digitalis has a remarkable effect upon this function, so placing the heart in a better position for carrying on its work. In the *Quarterly Journal of Medicine* for January, Alex. G. Gibson considers the action of digitalis on the human heart, finding that in a case investigated, in which the patient was very dyspneic, pale and markedly edematous up to the groins, the slowing of the pulse might with certainty be ascribed to digitalis, as on withholding it the pulse became continuously fast, and on again giving digitalis it became continuously slow. The study of the action of digitalis, more especially upon human heart muscle in the light of modern views, is not very far advanced. Gibson concludes that in the case studied we have evidence of the effect of digitalis on four of the primary functions of the heart, muscle conductivity had been diminished but only in the later stages, contractility had been diminished, excitability and rhythmicity had both been increased.

Heart Disease: In the *Medical Record* for March 7, Wachenfeld states concerning the prognosis and therapy of heart disease that we should of course not expect that indurated valvular excrescences can undergo any changes; perhaps recent vegetations are sometimes absorbed, although this is very doubtful. Diminution of a murmur does not prove diminution of the lesion, and we must never judge from the murmur the extent of a valvular lesion. Our main endeavor should be to prevent the ever-present feature of valvular trouble, the diminution of proper oxidation of the body, from becoming more marked through additional burdening of the circulatory system. As myocardial changes always accompany endocarditis, and the possibility exists that small latent foci may remain for years, we must primarily observe the action of the myocardium. These foci can be eradicated in only one manner (each case being separately considered), namely, by mild or strong stimulation of general metabolism by means of thermal baths, massage and suitable diet. These are the only measures which assure any possible success. He believes Bad Nauheim best adapted for the wide treatment of heart affections. He protests against the belief prevalent in America that the Schott method means Nauheim treatment. Schott takes the stand that hypertrophy of the heart is induced by means of gymnastics and he hopes thereby to obtain more energy, while Wachenfeld believes that such a thing cannot exist, nor can it take place. Every human being is endowed at birth with a maximum ability to develop his musculature. The muscles including the heart can develop only to the extreme limit of this ability. The condition necessary to a healthy maximum muscular development is normal metabolism; this simply means that conveyance of normal nutrient substances to the muscle cells, normal removal of waste and active muscular work or passive massage are necessary to healthy metabolism. Overstraining of the heart, however, must lead not only in the normal, but particularly in the diseased organ, to congestion of its lymph channels. Metabolism of the diseased heart is stimulated by increasing to a maximum the period of rest between contractions, hence digitalis, rest in bed, and thermal baths invigorate the diseased heart, while it is always harmed or damaged by gymnastics.

Antitoxin: The *Medical Review of Reviews* calls attention to the fact that three deaths have been recently recorded following suddenly the injection of diphtheria antitoxin and General Wyman of the Public Health and Marine Hospital Service, who has investigated the serum employed in each case, found it uncontaminated with dangerous ingredients. This fact stands out boldly against the too readily accepted notion that such injections are in themselves dangerous to life, for it is conceded by all authorities that the process of collecting and preparing the antitoxin is now done in a scientific way and clinical results have confirmed this statement. Dr Wyman states as a positive fact that diphtheria antitoxin plays no part in the poisonous action of horse serum, and is itself harmless. The symptoms following spaced injections of horse serum in animals are very characteristic, and indicate that the poisonous principle has a powerful influence on the respiratory centers. Paralysis of these centers is shown by the fact that respiration in fatal cases ceases long before the heart stops beating. Similar symptoms were reported in the human cases under consideration and the patients were in all probability sensitized, in some as yet unknown way, to horse serum. It is significant that two of the patients reported were afflicted with asthma, which disease is regarded as a neurosis. The results in these cases, and one other of which the bureau has knowledge, may furnish important clinical information to the effect that antitoxin should not be used or only with caution in persons with asthma or subject to asthmatic attacks. The results therefore in these fatal cases are not contraindications for its use in diphtheria but should only emphasize the fact of its potency and that the utmost care should be exercised in its administration.

Typhoid and Lactation: In the *Medical Record* for February 22, (*Annales de Medecine et Chirurgie*) M. Pehu discusses the advisability of continuing lactation during the course of typhoid fever, both from the standpoint of the mother and the child. He draws his conclusions from five cases seen in the hospital at Lyons. It has been established that lactation is not desirable in such acute diseases as variola, scarlatina, and diphtheria, but typhoid fever has not always been classed with them. He finds that the mammary gland acts as an efficient filter against the typhoid bacilli, and that the disease is rarely transmitted to the child. There is no especial gravity in typhoid arising during lactation, in the author's cases lactation did not seem to harm the mothers, convalescence was established at the usual time and was not especially slow. The use of cold baths did not seem to have any effect on the function of the mammary glands. The secretion of milk was diminished, but continued for a considerable period of time. The disease was not transmitted to any of the children, although one presented the Widal reaction in a slight degree, and in this case the mother's milk also gave the reaction of agglutination. The normal mammary gland does not allow of the passage of germs which circulate in the blood. The microbes must first alter the epithelium of the glands.

Fibrolysin: *Mercks' Archives* (from *British Medical Journal*) quotes Leonardo to the effect that thiosinamin is absolutely innocuous both in animals and man, even in fairly high doses. It is best given hypodermically in children in a five percent solution in glycerin and water (0.05 grams for the dose) and in adults in the form of fibrolysin which contains 15 percent of thiosinamin. From experiments on dogs it does not appear that the drug has any direct influence on scar tissue, but by inducing leukocytosis it may modify the processes of filtration and diffusion about the scar. Possibly some chemical action may occur in the scar as the effect of the thiosinamin, but no histologic changes can be observed, nor has the drug any bactericidal or antiseptic power. Hirtler treated a case of extensive burn of the lower extremity in which, before treatment, the knee was flexed at an angle of 30° and the foot was in equinus position owing to scar formation. After 15 injections of fibrolysin (2.3 c. c. every second day) the scar tissue softened and 25 more injections with mechanical treatment and passive hypermia restored complete motion in the joints.

Academy of Medicine of Cleveland

CLINICAL AND PATHOLOGICAL SECTION

The forty-ninth regular meeting was held Friday, March 6, 1908, at the Cleveland Medical Library, W. G. Stern in the chair.

W. G. Stern showed a child aged three with double club-foot treated from the hour of birth by overcorrection. One tendon only had required cutting. The importance of early and persistent treatment was emphasized.

W. B. Laffer showed three cases of neuritis. The first was in a girl 16 years old, who, while in perfect health, suddenly had the fingers of the left hand contract into the palm. Her mother straightened the fingers out, but after an hour or so they again contracted as before. She had as yet not had any pain or other sensory disturbance. Some hours after the onset of the contracture she was taken with pain, numbness, and paresthetic sensations in the left hand, arm and shoulder. The contractures recurred so frequently in the left hand during the next few days that a physician placed a splint on the hand. Soon contractures of a similar character developed in the right hand, and this hand, arm and shoulder became painful. The feet then showed contractures, the toes being flexed and the foot extended. All the nerves of the brachial and sacral plexus as well as those of the face became tender to touch. It caused her considerable pain to straighten out these contractures. The contractures would recur again usually after hours, or on the next day. All her extremities, her trunk and face show marked hyperesthesia. There is loss of pain sense in both hands extending up as far as the lower half of the forearm. Over this area in the left hand there is loss of temperature sense. Considerable atrophy is evident in both hands and forearms. There is complete paralysis of both flexors and extensors of both hands and wrists, and partial paralysis of the peroneal groups of muscles. Reflexes at first were active, but are disappearing. At first the case seemed one of hysterical contractures, or of tetany, but as the symptoms developed the diagnosis of neuritis became certain. No causative factor for the neuritis has been discovered.

The second case was one of neuritis of alcoholic origin, the peculiarity of which was that the man, who was a hard drinker, had had two attacks of neuritis limited exclusively to the left side of the body. He is now just recovering from the second attack, but the great weakness of the extensors of the fingers and wrists as well as the peroneal muscle on the left side is clearly evident. The man is right handed.

The third patient was a painter by occupation, 54 years old, who had been painting houses for 41 years until two years ago. Since 1881 he has suffered almost continuously from paralysis of the peroneal group of muscles. He did not stop painting when the paralysis came on but during the winter months, when house painting was difficult, he would improve and by the time the painting season opened again he would be nearly well. He never had any symptoms of loss of power or pain in the upper extremities. He has never been even a moderate drinker, taking only a glass of beer once or twice a month. After repeated attacks of paralysis of the peroneal muscles these muscles failed to recover, so that he now has complete toe-drop and paralysis of the extensors of the toes. The toes are contracted upon the soles of the feet, and show by their deformity evidence of a trophic disturbance. There is over the peroneal region partial anesthesia to tactile, temperature and painful sensations. The man has never had attacks of painters' colic, nor has he been a sufferer from headaches.

In the discussion of these cases C. F. Hoover suggested that in the first case a lesion of the cord might be responsible for the contractures. In an early case of tabes that he had been treating, irritation of the gastrocnemius reflexly led to violent contractures. In a case of alcoholic neuritis under his care the spinal fluid obtained by puncture showed a marked increase of lymphocytes and he thought the same condition might be found in the case reported. In reply W. B. Laffer said they found that by exposing animals to the fumes of lead salts very great changes could be produced in the anterior horns of the cord. The point of making an examination of the spinal fluid for an increase of cells is well taken.

M. Metzenbaum showed a woman aged 42, who, six years before, had developed lupus of the face. This had been healed three years later by curetting and radiotherapy. The disease had recurred and had been excised several times and treated with X-rays. One year ago she had come to him with a large growth of the side of the nose, which from microscopic examination proved to be epithelioma. It was curetted, cauterized and treated with radium with complete recovery and there was now, 16 months later, no recurrence.

C. W. Stone showed a patient with lead poisoning. The man had presented symptoms extremely suggestive of strangulation of an inguinal hernia upon his left side. He had been painting for only six or seven weeks, having been a baker previously. A well marked lead line was found upon the gums and inner surface of the lip but there was no sign of paralysis at first, although in the last few days there had been some slight pain and loss of power in the extensor muscles of the forearm. The marked abdominal pain and considerable vomiting, which suggested an intestinal obstruction, could be satisfactorily explained upon the theory of a cramp of the bowel due to chronic plumbism.

B. F. Oswald reported a case of paroxysmal hemoglobinuria of one and one-half years duration. The patient, a man aged 24, was anemic and poorly nourished. Upon exposure to cold at any time, summer or winter, he would be seized with a chill followed by high fever for a few hours. The first urine passed after the chill would be coffee-colored and contained hemoglobin and albumin, the presence of red blood-cells had not been determined; the urine passed subsequently would be perfectly normal and contained neither albumin nor hemoglobin. The patient had been treated at Mt. Clemens and had taken large quantities of quinin with no benefit.

In discussing the case C. F. Hoover said that he had recently had some interesting experiences with a case of hemoglobinuria in the Lakeside wards. The man, aged 30, gives a history very similar to that of B. F. Oswald's patient. The attacks follow exposure to cold and they had produced paroxysms by placing one foot in cold water for 30 minutes. If both arms were put in ice water for 50 minutes no attack resulted. It is a common experience to see these attacks come on after walking or standing on cold, wet ground. These patients have hemoglobinemia (oxyhemoglobinemia) preceding the hemoglobinuria. Coincidently with the hemoglobinemia appear the first symptoms of soreness and stiffness in the muscles of the back and legs, then comes the chill and later the elevation in temperature. The hemoglobinuria appears with the first symptoms of muscular soreness and stiffness. Whether the affection is due to a diminished resistance of the red cells or to a lytic property of the serum, has not yet been determined; one or other or possibly both factors enter into the causation of the hemoglobinemia. The disease is one of the blood and in no sense a kidney disease.

C. F. Hoover exhibited a radiograph of the hip of a child aged seven years. The child showed atrophy of the muscles of the thigh and slight atrophy of the leg muscles, the leg was shortened, the reflexes were normal, and there was no sensory disturbance. The radiograph showed the atrophy of the muscles and also a dislocation upward and backward of the head of the femur. The femur and acetabulum were smaller than on the opposite side. The question arose as to whether this was a congenital dislocation of the hip or the result of a poliomyelitis anterior. About half the medical men who had seen the child thought it was the former and the rest thought it was the latter. The child had never been ill except for a possible attack of pneumonia at the age of five months. In discussing the case G. I. Bauman thought it was a congenital dislocation, otherwise there would have been a considerable paralysis and disability at six months. He had seen several similar cases. W. G. Stern thought it was a congenital dislocation with a congenital dystrophy.

R. A. Boldt, in the absence of F. E. Bunts, showed a specimen of melanotic sarcoma with a large gland removed from the axilla. These had metastasized from a small pigmented mole removed from the back about five weeks previously.

W. E. Bruner introduced the following resolution which was voted on and carried: *Resolved,* that it is the sense of the Clinical and Pathological Section of the Academy of Medicine of Cleveland that the enactment of Senate Bill No. 411, known as the Bill on Optometry, would be detrimental to the interests of the people of Ohio.

The program was as follows:

1. Blennorrhea of the Eye from a Medical-Social Viewpoint, J. Stotter (appearing in full on page 210). In discussing the paper E. Lauder thought the subject very important and that it demanded consideration. Statistics showed that 25% of the blindness in the civilized world is due to blennorrhea, in Europe the percentage is as high as 50. Most European countries have made it a reportable disease and 12 of our own States have done likewise. H. J. Gerstenberger said that every doctor should realize the value of silver nitrate in this disease. He also thought that midwives should be compelled to pass an examination. In closing the discussion the writer said that while midwives could not be expected to exactly diagnose such diseases, they should understand that whenever they see an inflamed eye they should call a physician. This is the point he especially wished to bring out. The European midwives understand the necessity of this and act accordingly. He had been called in as early as the day after the child was born and had seen a good recovery under these circumstances.

2. The Etiology of Ectopic Gestation, Charles D. Williams, who said in part that: "From a clinical and operative standpoint, the literature, dealing with this anomalous condition, is found to be somewhat voluminous. On the other hand the histopathologic phase of it has been either neglected or relegated to the background.

It is difficult in most cases to recognize the exact lesion or abnormality accounting for the occurrence of a tubal pregnancy. This is especially so after the condition has progressed so far that the original anatomy of the tube has been destroyed or so altered that the recognition of the factor predisposing to the creation or development of the tubal pregnancy is obscured or obliterated.

It appears to me that we must associate this interesting condition with the most common lesion presented by the involved tube as well as the opposite one, which is capable of obstructing and preventing the entrance of the ovum into the uterine cavity.

Clinical observation shows in most cases that an inflammatory reaction of the fallopian tubes has preceded the onset of the ectopic pregnancy.

Histopathologic examination revealed in every case we examined that an inflammatory process either preceded or accompanied the tubal pregnancy. Not only did the tube which lodged the fertilized ovum show evidences of a pre-existent or an accompanying inflammation but the tube of the opposite side, when removed, presented similar changes.

The findings of Opitz (Zeit. f. Geb. u. Gyn., 1903, Bd. XLVIII) confirms what we have noted in our histopathologic study of these cases. In a series of 23 cases he found constant changes and formations in every instance.

A histologic examination of both fallopian tubes is of more value in the explanation of the etiologic factor or factors than simple clinical observation.

J. Bland-Sutton (*London Lancet,* Dec., 1904), in an examination of many records and specimens has found no authentic record of a case of tubal pregnancy in what are called the lower animals.

Schauta, Küstner, Dührssen and others believe that changes in the tubes incident to a gonorrheal infection predispose to tubal pregnancy. Other infections play their part although the changes induced by the gonococcus of Neisser are more extensive and more conducive to conditions which may obstruct the ovum in its transit toward the uterine cavity. A tuberculous process does not produce the ideal conditions for the retention and development of an ovum within the tube except possibly in the later or healing stages of the process.

The frequency of gonorrhea in the human being, with the almost entire absence of tubal infections in the lower animals, would tend to explain the frequency of tubal pregnancy in the former. We have found the cilia of the epithelial cells of the tubal mucosa always present in part, as also the muscularis, though the latter is generally altered and diminished in amount. The moderate destructive changes are however insufficient in themselves to account for the retention and development of the ovum in the tube.

By the coalescence and union of the folds of the tubal mucosa, loculi and canaliculi are formed which are readily demonstrable upon histologic examination. In the canaliculi the broader and more patent end is toward the celiac ostium of the fallopian tube.

These epithelial-lined channels vary in number from two to eight and upwards and to them we have given the name of false diverticula in contrast to true diverticula, very few of which are met with. It is in these diverticula that we believe the ovum is sidetracked, so to speak, retained and developed.

These offshoots at times extend a considerable distance into the muscularis, approaching very closely the peritoneal surface of the tube. Thus is it possible for very early rupture of the tubal wall with the extrusion of the ovum to occur and to be attended by slight injury to the tube and very mild symptoms. The site of the ovum along the tubal wall in a false diverticulum determines, we believe, whether a rupture of the tubal wall or a tubal abortion through the abdominal ostium takes place.

We have been able to demonstrate microscopically the presence of these false diverticula in every case of ectopic tubal pregnancy occurring in the gynecologic service of the Lakeside Hospital, not only in the tube lodging the fertilized ovum but also in the opposite one when removed.

Opitz has also shown their presence in every case in the microscopic examination of a series of 23 cases in which serial sections of the tubes were made.

After a review of the literature upon the etiology of tubal pregnancy and an exhaustive study of the pathologic conditions associated with it, both from a clinical and a histologic standpoint we are led to conclude that the formation of false diverticula resulting from a salpingitis is the most constant anatomic change or lesion found in the fallopian tube capable of impeding the descent of the ovum and producing a tubal pregnancy.

Many of the theoretical causes advanced occur too infrequently to account for the many cases of ectopic pregnancy met with. Other conditions, given as etiologic explanations, can be demonstrated neither macroscopically nor microscopically and are quite untenable. We are inclined to believe that in 95 to 98% of cases of tubal pregnancy the ovum lodges in a false diverticulum from which its escape into the uterine cavity is impossible. Extrusion later occurs in the direction of least resistance.

C. B. Parker in discussing the paper referred to a case in which, six months after an operation for a ruptured ectopic gestation, he had to operate again for the same condition in the remaining tube. The patient had been twice married and had never been pregnant until she had married her second husband who admitted having had gonorrhea. Within 18 months of this marriage she had had two ectopic gestations. In reply C. D. Williams said that in many instances there had occurred a gestation in the conserved tube that had been left *in situ* at a previous operation for the same condition in the other tube. If the patient is willing to accept the risk of this accident, the uninvolved tube may be left at a first operation, but in all instances the ovary at least should be saved.

3. A Case of Acromegaly with Thrombosis of the Superficial Veins, John Phillips. The case reported was that of a laborer, aged 51, admitted to Lakeside Hospital May 28, 1906, suffering from chronic myocarditis with evidences of failure of compensation—shortness of breath, swelling of his feet, dilated heart and enlarged tender liver. Inquiry revealed the fact that during the last 10 years his features had changed, his voice had become much hoarser, and his hands and feet had become much larger.

The patient was a man 5 feet 8 inches high, weight 210 lbs. His skin showed very free perspiration. He had a marked cervicodorsal curve and his abdomen was very pendulous. The skull presented the usual changes found in acromegaly, viz: the large occipital protuberance and frontal eminences, the prominent malar bones and the lower jaw enlarged so that it projected beyond the upper jaw. The alveolar processes were thick and there was distinct spacing of his teeth. His tongue was very much hypertrophied and the thyroid cartilage massive. The thyroid gland was small. The changes in trunk, hands and feet were those commonly observed in this disease. The urine showed albumin and casts. The optic discs showed nothing abnormal, but there was marked limitation of the color fields.

One point of importance in this patient was that on compressing the wrist lightly there was soon noticed a distinct flushing of the hand, the veins being distended and the arteries throbbing, but without pain. This vascular change was more marked in the feet than in the hands, and was very similar to the condition present in a case of erythromelalgia seen by the writer a few months previously.

The extraordinary feature of this case was that 18 days after admission to the hospital a small, symmetrically situated, slightly reddish induration 2 x 3 cm. was noticed in each forearm. They were quite tender and were situated in the superficial veins. The tenderness and swelling disappeared in about 10 days leaving only slight thickening. A few days later similar tender indurated areas appeared in each calf about 10 inches below the knee and another just above the left ankle. These also were definitely associated with the superficial veins. In all there were seven of these thromboses.

Very little is to be found in the literature regarding the cardiovascular changes in acromegaly. They have usually been looked upon as a coincidence and not in any way associated with the disease itself. J. B. C. Fournier, in 1896, made a careful study of the heart in acromegaly and noted two forms of cardiac alteration: (1) A simple cardiomegaly, the heart participating in the augmentation of volume of the other organs. (2) A true sclerotic myocarditis associated with generalized arteriosclerosis. The caliber of the blood vessels, especially of the veins, is usually increased. Varicose veins are very common. Some have described three phases in the lesions of the vascular system—dilatation of the vessels, thickening of the walls and obliteration of their lumen.

M. Metzenbaum in discussing the case said that as acromegaly was supposed to be due to pathologic changes in the pituitary body, an extract of it, which is now on the market, might prove useful. The physiologic action of this extract resembles that of adrenalin in raising the blood-pressure and in having hemostatic properties. J. Phillips closed the discussion and said that various observers had tried extracts of the pituitary body in this disease but with no results, possibly in the preparation of the extract the active principle had been destroyed. This does not, however, prove that the disease is not due to lesions of the pituitary body. He regretted to have been unable to secure an autopsy upon his case.

4. The Curative Properties of Radium, C. B. Parker. The speaker said in part that he desired to report his experience with radium as he had been the first one in this city to employ it therapeutically. After a few years, one's first enthusiasm over a new drug is apt to lessen and the real facts as to its usefulness are more exactly estimated. He first

became interested in radium through meeting Mackenzie Davidson, formerly Professor of Ophthalmology at Aberdeen, at the Madrid meeting of the International Congress in 1903. Davidson was the first, in the treatment of malignant disease, to make use of radium, which had just been discovered by the French scientists. He had tried it in hopes of being able to estimate more accurately the proper dosage than was possible at that time with the X-ray apparatus. It was through the courtesy of this gentleman that the speaker obtained his first tube of radium, a feeble one, but the only one at that time available. A few weeks later, however, he obtained a more powerful tube of radium bromid. So far he had treated three cases of epithelioma of the lip, five cases of carcinoma, two cases of lupus vulgaris and three cases of what he would call rodent ulcer—chronic indolent non-healing ulcers—which in two instances were situated at the left angle of the nose. The first case treated was a hopeless, inoperable mammary carcinoma of wide extent. The axillary glands were involved and the arm was swollen. Nothing was accomplished nor has he been able to obtain results in extensive carcinoma of any other part of the body. Two cases of cancer of the uterus were treated without any lasting benefit.

The second case treated was that of a man aged 73 who had had for five years an indolent ulcer about an inch in diameter, at the angle of the nose, on the left side, this had eroded the ala of the nose and the lip. It did not present the characteristic crater-like appearance and elevated indurated edges or hardness of an epithelioma. Application of the radium for an hour three times a week resulted in a cure early in 1904. In the fall of 1907 the ulcer recurred, appearing first as a blister changing to a scab and then an ulceration, until it was about half the size it had been in 1904. Application of radium again healed the ulcer and more rapidly this time than before. The history of this case suggests the limitations of the remedy as the condition may recur.

In three cases of epithelioma of the lip there seemed at first to be marked improvement. Two patients were operated upon, as they grew impatient with the radium treatment. The third case did not do well and was lost sight of. The ultimate results of radium in the treatment of epithelioma do not seem encouraging.

Two cases of lupus were also treated with radium. One patient had had the disease for 15 years during which time the lesion had been cured a number of times, first by cauterizing with silver nitrate and employing hygienic treatment, later by the use of X-rays, and the last time by radium. She is probably not permanently cured. In the second case healing was prompt and satisfactory, but less than a year has elapsed since the treatment, a period too short to determine final results.

He would not be without radium as a therapeutic agent. It is applicable to the smaller lesions but does not seem to answer for large areas. He had been using it upon a large epithelioma at the inner canthus of the eye, applying it all day; at first the usual marked improvement was noticed such as is experienced when using X-rays or Coley's toxins for malignant disease. He thought this decrease in size occurred in the surrounding area of small celled infiltration rather than in the cells of the tumor itself, since, as a rule, the tumor later advanced more rapidly than before. Radium seems to have healed, in his experience, small chronic ulcers—so-called rodent ulcers. As in one case the trouble had recurred within three years he has had the other patients return once a month for radium application, hoping in this manner to prevent a recurrence. He believes that the cures from radium are not as permanent as one would at first be led to believe. Nothing else apparently produces such prompt results in treating rodent ulcer or lupus but it does not cure large carcinomata. The operative results in malignant disease on first consideration seem better then they really are, thus if there is no return of a breast carcinoma after three years from the operation we usually consider it cured, when it would be much better to wait until seven years had elapsed.

Wyeth gives a very interesting report of the end results in sarcoma. The gist of it is that he had one case living ten years after operation for sarcoma. All the others had died, many of them within a limited time of the operation.

The result in the case shown at this meeting by M. Metzenbaum was a beautiful one and just what one might expect from radium treatment in a limited growth of this nature, but the question is will it prove permanent? From his own experience he doubted it. Possibly radium in the future may show better results than are at present being obtained.

In discussing the paper, M. Metzenbaum agreed with the speaker that radium has no effect in really malignant growths and is useful only in those that are indoiently malignant, such as rodent ulcers. It is absolutely useless when the glands are involved and epitheliomata that invade the mucous membrane do not react at all. Epitheliomata about the eyes and nose and occurring after middle age respond well to X-rays but even better to radium, and remain cured for as long as four years or more. Ordinary rodent ulcers also respond better to radium than X-rays and may remain well for four years, sometimes, however, only for six months. In really malignant disease there seems to be no permanent result.

Lupus vulgaris he has seen remain cured for four years. He has seen over 30 cases of rodent ulcer remain healed for from six months to four years. One case of metastatic sarcoma of the mouth, referred to him by W. Laffer, showed violent ulceration of the mucous membrane after nine or 10 days persistent use of radium. M. Lowenthal asked if the speaker had used any of the special radium emanations. In reply C. B. Parker said that he had had no experience with the use of the emanations.

Abstract of a paper read at the previous meeting, Feburary 21, 1908, upon "Obscure Fever in Infancy and Early Childhood," by John Lovett Morse, Boston, Mass. A daily rise of temperature above 99.5° F. in infancy and early childhood is abnormal and the manifestation of some diseased condition. Elevations of temperature, however, occur from slighter causes at this age than later because of the greater irritability of the nervous system, and are consequently of less importance. Endocarditis frequently causes a prolonged elevation of temperature without any other change in the symptoms. Uncomplicated eczema also frequently causes prolonged fever. The so-called fever of the new-born is almost invariably a manifestation of sepsis. Dentition does at times cause elevations of temperature in infancy, both acute and chronic. In the vast majority of instances, however, the fever which is attributed to dentition is really due to some disturbance of metabolism or to intestinal intoxication. The absorption of toxic substances from chronic inflammation of the tonsils and adenoids is a very common and unsuspected cause of long-continued fever. Otitis media, if not the most common, is certainly one of the most common causes of fever of obscure origin in infancy, as in many cases the fever is the only symptom outside of those of general discomfort or of indefinite pain. It is very generally overlooked because of the general misapprehension as to the symptomatology of otitis media in infancy and the neglect of examination of the ears. Bronchial adenitis as well as cervical adenitis is probably not infrequently the cause of obscure fever; the diagnosis, however, is extremely difficult. Another cause of obscure fever, both acute and chronic, more common in infancy than later, is bacterial infection of the urinary tract, usually secondary to some other disease. The fever is usually irregular and often high. As a rule there are no symptoms pointing to the urinary tract and the diagnosis is first made when the urine is examined. The tendency is to attribute every long continued fever in infancy and early childhood, for which it is impossible to find any plainly evident cause, to hidden tuberculosis. This is, however, probably comparatively seldom the cause of continued elevation of temperature in early childhood. In the majority of cases, in which the fever is supposed to be tuberculous in origin, it really is due to disturbances of digestion or metabolism. The explanation of this comparative infrequency of tuberculosis as a cause of obscure fever in infancy and early childhood is presumably that at this period of life tuberculosis tends to dissemination and a rapidly fatal course. Chronic latent cases are consequently relatively rare.

Long continued elevations of temperature without very evident cause in infancy and early childhood are probably most often due to a mild grade of intestinal toxemia. The temperature is usually not very high and it is often normal in the morning. It may run for weeks or months with practically no intermission; in others it is intermittent, being elevated for days or weeks at a time, then normal for days or weeks, and so on. In some cases the general condition is more or less impaired, in others not at all. In many instances there are symptoms of disorder of the digestive tract; in others these are almost entirely wanting, and in others they are intermittent while the temperature is constant. Intestinal toxemia is especially likely to develop in children who are overfed or improperly fed. In most cases the trouble is due to decomposition of the proteids, but sometimes to an excess of carbohydrates. These cases yield fairly promptly to milk and starchy diet, the object of this diet being to change the intestinal culture medium and thus modify the intestinal flora. In rare cases the temperature is due to milk and continues as long as milk in any form is given. This milk idiosyncrasy is never a primary, but always a secondary condition.

Finally, there is a class of cases of continued fever in infancy and early childhood in which the most careful examination fails to find any cause for the fever, in which no modification of the diet is of any avail and in which the general condition is unaffected, the child being apparently well and gaining normally in weight. The temperature may remain elevated for many weeks or even months, and finally cease without any cause having been discovered. The most reasonable explanation of the fever in these cases is some obscure disturbance of metabolism. Such cases justify the conclusion that if a careful study and careful examination of the child does not reveal the cause of the fever there is, in the vast majority of cases, nothing serious the matter and no cause for anxiety. (Discussion of this paper on page 175, March issue.)

EXPERIMENTAL MEDICINE SECTION

No meeting of this Section was held during March.

THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The thirty-third regular meeting was held Friday, February 28, 1908, at the Cleveland Medical Library, A. R. Baker in the chair.

W. E. Bruner presented radiographs of a case of gunshot wound, taken one month after the injury. When seen the patient insisted that the ball had been removed at the primary operation performed in Toledo. The wound of entrance was in the right temple and the sight of the right eye was gone. The examination of the interior of the eye showed infiltration of the vitreous and total blindness. The radiographs showed the ball embedded in the region of the nose. Unfortunately the patient left the hospital before an operation for removal of the ball could be performed. Two radiographs were taken, one anteroposteriorly and one from the side. C. C. Stuart, A. R. Baker and E. Lauder discussed the case.

The program was as follows:

(1) Chondroma of the Larynx with Exhibition of Specimen, J. H. Lenker. Remarks by A. R. Baker.

(2) Buphthalmos: Report of a case with Presentation of Macroscopic and Microscopic Specimens, C. C. Stuart. Discussion by W. E. Bruner.

(3)) The Value of the Tropometer in Heterophoria and Heterotropia, Edward Lauder.

There was a general discussion by various members in regard to a bill proposed in the State Legislature to regulate the practice of optometrists. It was moved, seconded and carried that, "It is the sense of this Section of the Academy that the consideration of this proposed bill to regulate the practice of optometrists should be postponed until the next session of the Legislature."

Agreement between the Milk Commission of Cleveland and The Walker-Gordon Company of Cleveland, Ohio

The following agreement made this third day of December, 1907, between Mr Samuel Mather, Dr E. O. Adams, Dr Hudson D. Bishop, Dr E. F. Cushing, Dr S. W. Kelley, Dr H. H. Powell, and Dr J. J. Thomas, parties of the first part: That the party of the second part hereby binds itself to a fulfillment of the provisions of this contract, for and in consideration of the benefits hereinafter named by the parties of the first part.

SECTION 1. The party of the second part hereby agrees to conduct such parts of its dairy as may be hereinafter named, collect and handle its products in conformity with the following code of requirements.

The milk and cream thus produced shall be known respectively as "Canfield's Certified Milk" and "Canfield's Certified Cream." They shall be designed especially for clinical purposes, and when at any time the demand shall be greater than the supply, the preferred purchasers shall be residents of Cuyahoga County desiring certified milk or cream for infant feeding or the diet of the sick.

SEC. 2. The parties of the second part further agree to purchase and to use, subject to direction, the necessary caps for closing bottles of certified milk and cream from the parties of the first part, paying therefor not more than $5.00 per thousand.

SEC. 3. The parties of the first part agree to appoint a chemist, a bacteriologist and a veterinary surgeon, who shall examine and inspect the dairy and the aforesaid certified milk and cream.

SEC. 4. The following are the examinations to be made for the parties of the first part, at such times as in their judgment is desirable, including a statement of the probable frequency of said examinations:

(a) A physical examination and tuberculin test of each animal to be added to the herd.

(b) An annual examination and tuberculin test of all animals in the herd, exclusive of stock under six months of age.

(c) Inspections of the herd, dairy buildings, and care of the milk. These inspections shall be made without previous warning, at intervals of one month, unless, at the discretion of the parties of the first part, such frequency is unnecessary in cool weather.

(d) Bacteriologic examinations of certified milk and cream at intervals of one month.

(e) Chemical examinations of the certified milk and cream at intervals of two months.

SEC. 5. The following supplementary examinations may prove necessary from time to time.

(a) Additional bacteriologic and chemical examination of certified milk and cream when the regular examination indicates a product failing to reach the standards set by the parties of the first part.

(b) Additional inspections of the production and handling of certified milk and cream by any or all of the experts of the parties of the first part under similar circumstances.

SEC. 6. The above examinations and inspections, both regular and supplementary, are made for the parties of the first part by their experts.

The parties of the first part pay for all examinations ordered by them, but the parties of the second part hereby agree to reimburse the parties of the first part for all examinations and tuberculin tests of animals added to the herd in the intervals between the succeeding annual examinations, and for any inspections, chemical or bacteriologic examinations made necessary by a failure to reach the standards set for certified milk and cream.

SEC. 7. The veterinary inspector shall, at intervals specified above (Sec. 5-c), and without previous warning to the dairy, inspect the cleanliness observed in milking, the care of the various utensils employed, the nature and quality of the food used and all other matters of hygienic nature bearing upon the health of the cows, and the cleanliness of the milk, including also as far as possible an inquiry into the health of the employees on the farm. He shall also see that no animals are admitted to the herd without his approval.

SEC. 8. The bacteriologist shall procure a specimen of the milk from the dairy or preferably from the delivery wagons, at intervals to be determined by the parties of the first part, but in no case at a longer interval than one month. The exact time shall be without previous notice to the dairy. He shall test this milk for the number and nature of the bacteria present in it, to the extent which the needs of safe milk demand. He shall also make a microscopic examination of the milk for pus cells. Milk free from pus and injurious germs and having not more than 10,000 germs of any kind or kinds to the cubic centimeter shall be considered to be up to the required standard of purity. Samples of certified cream shall be similarly secured and examined. For cream the bacteriologic standard shall be 30,000.

SEC. 9. The chemist shall, in similar manner, procure and examine the milk for the percentages of proteid, fat, sugar, mineral matter and water present. He shall also test its chemical reaction and specific gravity, and shall examine it for the presence of foreign or other matters, or of chemicals added as preservatives. Certified milk shall range from 1.029 to 1.034 specific gravity, be neutral or very faintly acid in reaction, contain from 3 per cent to 4 per cent proteid, and from 3.50 per cent to 4.50 per cent sugar, 3.75 per cent to 4.25 per cent fat, and shall be free from all contaminating matter and from all addition of chemical substances or coloring matters. Milk shall not have been subjected to heat before the examination has been made, nor at any time unless so announced to the consumer.

The fat percentage of certified cream shall be 20 per cent, and it shall not vary more than two per cent from this standard.

SEC. 10. Under ordinary circumstances bacteriologic and chemical examinations of certified milk and cream are not made, unless at the discretion of the parties of the first part, until a satisfactory report of its production and handling has been received from the veterinarian.

SEC. 11. Upon the failure of any sample of certified milk or cream, secured by the experts of the parties of the first part for examination, to reach the standards here outlined, a second sample shall be promptly secured for a repetition of the examination, and not until a second report has been received confirmatory of the results of the first shall the examination be held to indicate a product not reaching the standards of the parties of the first part. Upon receipt of such proof of a failure of technic in production or distribution, the veterinarian or other experts of the parties of the first part shall cooperate with the dairy officials in search for these errors.

SEC. 12. Having received reports from their experts that the production and handling of Canfield's certified milk and cream is being carried on in a satisfactory manner, and that the product conforms to their chemical and bacteriologic standards, the parties of the first part shall issue to the parties of the second part a certificate or certificates to this effect, for display in appropriate places.

Further, the parties of the first part shall keep a mailing list of physicians, including at least all those who may request it, to whom information shall be sent when the milk produced by the parties of the second part fails to reach the standards set or to be produced under the conditions herein set forth. Provided also that similar notice be given when conditions are corrected.

LANDS

SEC. 13. It is hereby understood and agreed, that the lands used by the owners, agents or assigns of the dairy, conducted by the party of the second part and employed for pasturage, or any lands, that may be hereafter acquired for such purposes, or such land as may be used for the cultivation of hay or fodder, shall be subject to the approval of the parties of the first part.

SEC. 14. Said lands shall be kept in a condition of cleanliness and order, and upon lands in the neighborhood of the dairy buildings, or lands used for paddocks or pastures, loose dirt, rubbish, decayed vegetable or animal matter or animal waste shall not be allowed to accumulate. Neither shall there be upon such lands any constantly wet or marshy ground or stagnant pools of water.

THE BUILDINGS, THEIR SURROUNDINGS, CONSTRUCTION AND CARE

SEC. 15. It is also understood and agreed that the stables and other buildings used in the production of certified milk shall be erected in desirable locations and constructed after the most approved plans with reference to the following points:

(a) Proper drainage.

(b) Adequate lighting, providing not less than four square feet of windows, with east, south or west exposures, for each cow.

(c) A ventilating system according to approved hygienic methods.

(d) The prompt and easy removal of waste products and freedom from accumulation of dust and mold.

(e) Any other points of construction or location insofar as these may affect the health of the certified herd or the character and condition of the milk.

SEC. 16. Nor shall there be kept within 300 feet of any building used for dairy purposes, any fowls, hogs, horses or other live stock.

SEC. 17. The waste products of the stable shall be removed so frequently, and the stable floor so thoroughly cleaned, that the same shall be as free as possible from animal odors.

WATER SUPPLY

SEC. 18. The dairy shall be supplied with an abundance of pure water. No water from wells or springs located within 300 feet of the stable or other buildings housing animals or containing animal waste or material affecting the purity of water shall be used for watering stock, cooling milk or cleaning vessels. Furthermore, all such wells and springs shall be fully protected from surface drainage.

Sec. 19. It is hereby understood and agreed that the milk and cream shipped from the dairy of the party of the second part under the designation "Canfield's Certified Milk and Cream" shall be the product only of cows stabled and pastured in barns and on lands conforming to the requirements of the parties of the first part, and meeting the approval of said parties and their experts.

Sec. 20. Further, that the following shall be sufficient reasons to exclude any animal from the certified herd:

(a) Absence of proof by physical examination and tuberculin test of freedom from tuberculosis.

(b) Fever.

(c) Septic absorption or other disease, following or associated with parturition.

(d) Mammitis or mammary abscess.

(e) Persistent diarrhea or any other abnormal physical condition, which could in any way be detrimental to the character of the milk.

(f) Ill health of any kind prejudicial either to other animals in the herd or to human health.

(g) A period of nine weeks before calving and six days after parturition.

(h) A state of excitement either as a result or during the period of extrux, or nervousness caused either by beating, whipping, kicking, prodding or running.

Sec. 21. Such excluded animals shall not be allowed to mingle with the herd and no use detrimental to the health of the herd shall be made of their milk upon the farm nor shall their milk be shipped from the farm.

Sec. 22. It is also understood and agreed that the party of the second part shall exclude from the herd used for producing certified milk and certified cream, immediately after discovery, any animals bred by said party subject to the following conditions: Any animal that was not, as a heifer, kept sterile during its first 27 months, any animal that was bred through consanguinity within a period of three generations.

Sec. 23. It is furthermore agreed, that the dairy stock employed in the production of certified milk shall be housed in buildings and kept under surroundings provided above, shall have at all times proper exercise in the open air; that they shall be properly sheltered from the influences of weather and climate prejudicial to their health; also that the animals shall have the hair of the flank, side and udder closely clipped, be kept clean, groomed every day, and treated kindly at all times.

FEEDING

Sec. 24. It is hereby understood and agreed that the methods of feeding the cows furnishing certified milk shall be subject to the approval of the parties of the first part. No materials shall be employed which are or may become injurious to the health of the animals, or that will produce an impoverished milk, or that will impart to it unnatural odors or flavors. Nor shall the cows be allowed to eat green or wormeaten fruit, poisonous weeds, or to drink poisonous or stagnant water.

SEC. 25. The apartments used for the storage of either feed or fodder shall be removed from possible contamination by stable waste or animal odors.

THE MILKERS AND CARETAKERS

SEC. 26. No persons who are suffering from any communicable disease or who have come in contact with others having contagious or infectious diseases shall be allowed to act as milkers or herdsmen, or to come in contact with the certified herd or its product in any other manner.

SEC. 27. The person or persons engaged in milking shall be dressed in clean overclothes and caps, and shall, before milking, first wash their hands, using soap and nail brush, and afterwards thoroughly rinse the hands in clean water, and dry them.

SEC. 28. The milk pails, coolers, bottles and all other utensils used for milking or coming in contact with milk shall be of a pattern approved by the parties of the first part, and shall before being used be cleaned by hand separately with the aid of hot water, alkaline soaps and steam. After thorough rinsing in hot water they shall be heated to a temperature adequate to effect complete sterilization, and shall be kept removed from possibility of contamination in a dry odorless atmosphere until used.

SEC. 29. In preparation for milking, the cows, in addition to the general care provided above (Sec. 24), shall have all loose dirt brushed from flank and side, and shall have flank, side and udder washed with clean water, using a separate cloth for each cow. Further, a small amount of foremilk shall be discarded.

SEC. 30. No milk shall be represented as certified milk that has been drawn from the animal at abnormal hours, such as midnight or noon.

SEC. 31. No milk shall be represented as certified milk that does not consist of the entire contents of the udder at each milking, excluding only a small amount of foremilk.

It is furthermore agreed that no milk shall be represented as certified milk that has been changed or reduced in any way, by the addition of water or any solid or liquid substance, in or out of solution, or the subtraction or removal, in any manner, of any part thereof.

CARE AND BOTTLING OF MILK

SEC. 32. It is hereby understood and agreed that all milk represented as certified milk shall receive every known detail of care that will promote its keeping qualities, and favor its safe transportation.

SEC. 33. No milk shall be represented as certified milk that has not been passed through a sieve of wire or other cloth, either while milking or immediately thereafter, having not less than one hundred meshes to the linear inch.

SEC. 34. That the milk on being drawn from the cow shall immediately be cooled by a method approved by the parties of the first part, reducing its temperature to a point not above 42 degress or below 38 degrees Fahrenheit as it leaves the cooler, while being held for shipment, during transportation and until its delivery to the purchaser the temperature shall not exceed 50 degrees Fahrenheit.

SEC. 35. It is furthermore agreed that, after cooling, certified milk shall be bottled expeditiously by a method approved by the parties of the first part at an average time of 15 minutes after milking. The bottles after being filled shall be closed with caps furnished by the parties of the first part and further protected by parchment circles having upon them the name of the dairy and the next day's date as the "Date for Delivery."

SEC. 36. After bottling, while awaiting transportation, and during transportation, certified milk shall be guarded against an undue rise of temperature by being kept in refrigerating rooms or in shipping cases packed in ice.

TRANSPORTATION AND DISTRIBUTION

SEC. 37. It is hereby understood and agreed that the transportation and distribution of certified milk shall be conducted by the party of the second part or by persons acceptable to the parties of the first part. No certified milk shall be delivered as such more than 36 hours after milking or 24 hours after its arrival in the city.

SEC 38. That in transit the milk shall not be exposed to any of the foregoing prohibitory conditions:

(a) That it shall not be subjected to agitation.

(b) That it shall not be exposed to the heat of the sun.

(c) That the delivery wagons shall be so constructed that the required temperature of the milk may be maintained during transit.

(d) That before the wagons are filled for shipment the body, the trays, and compartments shall be flushed with boiling water.

SEC. 39. It is furthermore agreed that the distributing agents, during the transfer of the milk to the purchaser, should be subject to the following restrictions:

That they shall use no tobacco, that they shall take no intoxicating drinks, that they shall not collect the empty containers nor receive money or milk checks from houses in which a communicable disease is known to exist.

SEC. 40. It is also hereby agreed, that the collection of empty bottles from places where infectious or contagious diseases are known to exist, shall be made by other persons than those employed to deliver the milk. Further, that before these empty bottles shall be returned to the dairy, they shall be carried to a separate building and first be subjected to the process of cleaning indicated in a former clause of this contract.

IN CONCLUSION

SEC. 41. It is hereby understood and agreed that if any further precautions or changes in method, calculated to improve the quality of milk, or guard the same from impurities or dangers, is desired, that the party of the second part will cheerfully be governed by such additional rules and regulations as may be laid down by the parties of the first part.

SEC. 42. It is furthermore agreed by the party of the second part, the same binding the owners, agents or assigns of the aforesaid dairy, that in the event of failure to comply with any or all of the specific requirements of the foregoing contract, the parties of the first part shall reserve the right to withdraw from the contract, and publish the fact in such manner as they deem best.

SEC. 43. It is furthermore understood and agreed by and between the parties hereto, that either shall be at liberty to cancel this agreement by giving two months notice in writing, of a desire to do so, in case of inability for any reason to comply with the terms of the same.

IN WITNESS WHEREOF, the said parties have hereunto set their hands, the day and year first written above.

Book Reviews

The Pancreas: Its Surgery and Pathology. By A. W. Mayo Robson, D. Sc. (Leeds), F. R. C. S. (Eng.) of London, and P. J. Cammidge, M. D. (Eng.) D. P. H. (Camb.), of London. Octavo volume of 564 pages, fully illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, $5.00 net; Half Morocco, $6.50 net.

This valuable monograph gives a most comprehensive view of our present knowledge of the diseases and surgery of the pancreas, a field in which wonderful advances have been made within recent years but in which there are still many unsettled problems awaiting solution. With the rapidly increasing knowledge of the normal and pathologic processes of this gland and the steadily improving results of operative procedures no doubt many of these disputed points will be settled. When this is done we shall be even better able than at present to recognize and successfully deal with pancreatic lesions, conditions which until recently were regarded as almost a *terra incognita.*

The comparative anatomy of the gland, which is first considered, furnishes valuable aid in explaining certain points relating to the function and pathology, especially such as are due to the varying disposition of the pancreatic ducts. These and various other abnormalities are fully described.

The physiology and histology are fully dealt with. Regarding the significance of the islands of Langerhans, the authors carefully summarize the various theories but are themselves inclined to believe that they are independent of the secreting acini and have to do with the special control of carbohydrate metabolism that the pancreas possesses.

The importance of the chemical pathology, especially that of the "pancreatic reaction" as obtained by their improved methods, is emphasized. While the authors do not claim that it is infallible, yet, taken in conjunction with other evidence, it has proved a most valuable aid in the diagnosis of pancreatic lesions.

Stress is laid upon the close association existing between gallstone disease and inflammatory diseases of the pancreas. The prompt operative treatment of cholelithiasis is therefore strongly insisted upon. Upon page 458 are given the details of their operative procedure which they have found so satisfactory in fully exposing the head of the pancreas and the ducts in a manner readily accessible for operative measures. For impacted calculi in the common duct they advise incision of the duct with subsequent suture of it and gauze drainage. Cholecystenterostomy, however, seems advisable to them in compression of the common duct from interstitial pancreatitis or in stricture of the duct, its value, however, in malignant disease they consider questionable as the primary lesion is hopeless.

The book is well gotten up and is abundantly illustrated. It is a valuable addition to the working library of anyone interested in the subject.

The Diagnosis and Treatment of Pulmonary Tuberculosis. By Francis M. Pottenger, A. M., M. D., Monrovia, California; Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, Cal.; Professor of Clinical Medicine, Medical Department, University of Southern California; Chief of Medical Staff of the Helping Station of the Southern California Anti-Tuberculosis League, Los Angeles, Cal., etc.

The diagnosis and treatment of Pulmonary Tuberculosis by Francis M. Pottenger should be in the hands of every general practitioner. The importance of the subject as well as the constant contributions that are being made to the literature upon the disease will make every student feel the necessity of brushing up occasionally. Perhaps some will be able to find the time to supplement their reading by attending a tuberculosis dispensary daily for a few months. To such, this work will be particularly useful. To those who are too busy to do this, it will be handy as a book of reference.

Some of the features that make it valuable are: a full discussion of the diagnosis, both early and late, and the specific treatment of tuberculosis, its indications and its limitations.

The book is well printed, well bound, and not too bulky to be read comfortably for hours at a time, and yet it covers the subject indicated by the title in a thorough manner.

Practical Dietetics with reference to Diet in Disease, by Alida Frances Pattee, Graduate Department of Household Arts, State Normal School, Framingham, Mass.; Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City; Former Instructor at Lakeside, St. Mary's, Trinity, and Wisconsin Training Schools for Nurses, Milwaukee; St. Joseph's Hospital, Chicago; Special Lecturer at Bellevue, Mount Sinai, Hahnemann, and the Flower Hospital Training Schools for Nurses, New York City; St. Vincent de Paul Hospital, Brockville, Ontario. Fourth edition. A. F. Pattee, Publisher. Mount Vernon, N. Y.; 52 W. 39th St., New York City.

The fact that since 1903 three previous editions of this book have been exhausted speaks well for its reception. The properties and composition of various foods are first described and the methods of serving them when prepared. The second part consists of varied receipts for all sorts of foods and drinks, while the third part, "Diet in Disease," takes up the various diseases in order and gives the appropriate dietaries for them as recommended by leading medical authorities whose names, and the references to whose articles, are given. The diet in infancy and early childhood is also described and an appendix of useful information, tables of weights and measures, etc., completes the volume. It appears to be a most useful and convenient work upon this important subject, about which the physician's knowledge often proves very limited when he is asked by anxious friends just what articles of diet should be given and just how they should be prepared.

Practical Fever Nursing. By Edward C. Register, M. D., Professor of the Practice of Medicine in the North Carolina Medical College. Octavo volume of 352 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $2.50 net.

An excellent textbook on practical fever nursing, written especially for nurses, it is a work which cannot fail to be of great value, the chapters devoted to treatment and diet being especially worthy of mention.

Sections on disease itself are important, as a nurse to intelligently care for a patient must have some knowledge of the disease.

The chapters on typhoid fever, spinal meningitis and scarlet fever are good, giving in detail the isolation, disinfection, etc.

The work as a whole is unusually clear and completely covers the field of fever nursing.

Woman, A Treatise on the Normal and Pathological Emotions of Feminine Love. By Bernard S. Talmey, M. D., Gynæcologist to the Yorkville Hospital and Dispensary; former Pathologist to the Mothers' and Babies' Hospital, etc., New York. For physicians and students of medicine and jurisprudence, with 23 drawings in the text; second enlarged and improved edition. Practitioners' Publishing Company, New York.

The first edition of this book was very recently reviewed in these pages, the present, second, edition has been amplified and extended.

The subject is one that requires most careful handling and the author has discussed the matter in a very proper spirit. No matter how scientifically it was treated it would possibly not be approved by certain prudishly inclined persons, nevertheless it is a most important matter and requires due consideration on the part of physicians, especially those who have to deal with neurotic patients of the female sex.

Correspondence

CHICAGO, MARCH 7, 1908.

EDITOR CLEVELAND MEDICAL JOURNAL:

Dear Sir—The Women's Alumnæ Committee, the Woman's Medical Society of the State of Illinois, and The Medical Woman's Club of Chicago, each wish to entertain the women physicians visiting Chicago at the meeting of the American Medical Association, next June.

As the session of the American Medical Association is so short and the time so entirely filled, these three organizations have combined efforts, and hereby extend to all the women physicians, who will be in Chicago at that time, a most cordial invitation to a banquet and entertainment to be given on the evening of June 2, which is the evening that has been reserved for the special entertainment of the visiting alumni.

At this banquet a special feature will be made of the reunions of the alumnæ of the different Colleges.

The College Club in the Fine Arts Building, No. 203 Michigan Boulevard, will be exclusively at the disposal of the medical women during the meeting of the A. M. A., and will afford a place for them all to meet, lunch, and visit together.

Yours truly,

JULIA D. MERRILL.

To American Physicians Interested in the Alcoholic Problem

During 1907 over 200 papers, lectures and pamphlets were published in Europe and America concerning alcoholism and inebriety, from a purely scientific point of view. Many of the authors complain that these papers were practically lost, because they did not reach medical men interested in the subject. The Scientific Federation Bureau organized in Boston two years ago, for the purpose of collecting and disseminating the facts concerning the alcoholic problem, proposes to secure a list of medical men interested in the scientific study of the alcoholic problem. This list will be valuable for authors and students who wish to address a special audience of physicians, not only to increase their interests, but to stimulate more exact studies of the subject. Such a list will enable the Bureau to extend its work of accumulating papers and reprints of all that is written, and keep authors and readers familiar with all that is done. All physicians who are interested in the scientific study of the alcoholic problem and research work along this line, and the studies of medical men at home and abroad, are urged to send their names and addresses so as to be registered and receive copies of papers and abstracts from authors and others who wish to have their papers read by interested persons. As chairman of the board of directors of the Scientific Federation Bureau, I earnestly request all physicians interested in this study to send me not only their own names, but the names of other medical men who would care to keep in touch with the new medical literature along these lines, and also to know the latest conclusions in the scientific world concerning this problem.

Address,

T. D. CROTHERS, M. D., Chairman, Hartford, Conn.

Medical News

W. O. Osborne sailed for Europe on March 28.

W. H. Merriam is studying in the European Clinics.

C. W. Aldrich has been quite seriousy ill for some time past.

O. H. Boulee has recently moved his office from the Lennox Building to 1000 Payne Avenue.

William R. Lincoln, of this city, was operated upon last month for cholecystitis and is now convalescent.

W. I. LeFevre has removed his office from the Rose Building to the Lennox Building, Euclid Avenue and East Ninth Street.

Fannie C. Hutchins, of this city, returns this month from New York where she has been spending several months in postgraduate hospital work.

C. F. Hoover has been appointed on the Clinical Consulting Staff of the Council on Pharmacy and Chemistry of the American Medical Association.

J. F. Hobson, of Lakewood, sustained a serious injury to his eye as a result of a street car accident early in March. The eye had to be enucleated subsequently.

The American Proctological Society will hold its tenth annual meeting at the Palmer House, Chicago, June 1 and 2, 1908. An attractive preliminary program has been issued.

C. B. Parker gave an interesting lecture at the Cleveland Medical Library upon The Life of Buddha and the Sacred Places of Buddhism, on February 4. The proceeds were in aid of the Library.

The American Gastro-Enterological Association will hold its eleventh annual meeting at Chicago, June 1 and 2, 1908. An exceedingly interesting program has been provided upon which are papers by several Cleveland physicians.

There is an opportunity for a physician to secure a good location in this city since a well-established physician is moving from his office and residence which he has occupied for 11 years. Details may be obtained through the Journal office.

About the middle of March, a committee of Cleveland oculists together with others from different parts of Ohio had a hearing before a committee of the State Senate in reference to the Optometry Bill, the passage of which they wished to oppose.

The Charity Hospital Medical Society held its March meeting, Wednesday, March 11, 1908. The program was as follows: Presentation of Cases, E. D. Neer; The Relative Value of the Roentgen Rays in the Diagnosis of Pulmonary Tuberculosis, R. A. Bolt; Presentation of Pathologic Specimens.

The St. Alexis Hospital Alumni Association held its regular meeting at the Hollenden, Thursday evening, March 5, 1908. The program was as follows: Typhoid Fever, A. H. Bruening; Psoriasis, R. J. Lawlor; Paper, A. F. Klohs; Report of case of Pregnancy complicated with Uterine Fibroid, Thomas Adams; Report of Case of Pharyngeal Syphilis, I. Goodman.

The Lakeside Hospital Medical Society held its March meeting in the Hospital Library, Wednesday, March 25, 1908. The following clinical cases were shown: A Child with so-called Amaurotic Family Idiocy, W. E. Bruner and C. F. Hoover; Pernicious Anemia with Spinal Cord Symptoms, and a case of Bone Metastases in Carcinoma, C. L. Cummer; Suppurating Perforating Ulcer of Foot occurring in Diabetes, J. R. Beiter; Carcinoma of Larynx with Tracheotomy, F. W. Vincent; Gastric Carcinoma with Gastroenterostomy, I. H. Fuhs; Operative Cases showing the Employment of Michel's Clamps for Closing Skin Incisions, Hunter Robb. The following reports of cases were made: A Case of Purpura, F. W. Vincent; Temporary Resuscitation of a Patient after Eight Minutes of

Cessation of Heart Beat, following Operation for Removal of Cervical Glands, H. G. Sloan; Paroxysmal Hemoglobinuria, C. W. Stone; Congenital Dislocation of Hip with Muscular Atrophy, C. F. Hoover and H. O. Feiss.

The Allen Society of the W. R. U. Medical Department met March 10, 1908. The following program was presented: Life of John Hunter, O. H. Love; Inflammatory Diseases of the Pancreas, W. C. Martin; The Normal Baby, H. A. Berkes; Gonorrheal Arthritis, E. A. Duncan.

A most enjoyable banquet was held by the Alumni of Ohio Wesleyan University on Tuesday evening, March 17, at the Colonial Club. The principal address of the evening was by Herbert Welch, President of the University, and R. E. Skeel responded in behalf of the Medical Department. Prof. Parsons of Delaware also spoke briefly and Professor B. U. Rannells of East High, President of the Alumni Association, acted as toastmaster.

The Ohio State Democratic Convention will be held in Columbus, May 5 and 6. At the same time the Ohio State Medical Association will be in session. Those desiring hotel accommodations are advised to make immediate arrangements.

The following lectures upon Medical Ethics and Related Topics are being given in the amphitheatre of the W. R. U. Medical College at 3 p. m. on the dates indicated. While the lectures are especially for the students of the College, any member of the profession will be welcome.

1. The Consultant in Internal Medicine, C. F. Hoover—March 7.
2. Medical Service in the Army and Navy and Marine Hospital Corps, F. E. Bunts—March 14.
3. Medical Teaching and Research as a Vocation, J. J. R. Macleod—March 21.
4. The Physician as a City Health Officer, Coroner, District Physician or School Inspector, L. W. Childs—April 18.
5. Medical Ethics, F. C. Shattuck, of Boston, to be given at the Cleveland Medical Library at 8 p. m., April 25.
6. The Training of the Surgeon, D. P. Allen—May 2.
7. The Careers Open to the Medical Graduate as a Sanitarian, W. T. Howard—May 9.

The eighteenth meeting of the Association of American Medical Colleges was held at the Cleveland Medical Library on Monday and Tuesday, March 16 and 17.

This Association includes about 60 of the better medical schools of the country, which are organized to maintain minimum standards of medical education. About 40 of these schools were represented at this meeting, delegates being present from California to New York.

The morning session of the first day was taken up with matters of business and reports of committees; the most important report was that on the Committee of Syllabi. This committee is gathering and compiling information in regard to the nature and amount of work given in the courses taught to medical students. The report of this year concerned only the work of the first year courses. This committee hopes to be able in the course of a year or two to present a syllabus of a minimum standard course in each of the subjects of the first two years of the medical curriculum.

The afternoon session of the first day was taken up with the reading of the following papers:

The Raising of Standards—W. L. Bryan, President Indiana University.

Academic Seniors in Absentia in Professional Schools—A. R. Baker, Cleveland College of Physicians and Surgeons. Discussion opened by Herbert Welch, President Ohio Wesleyan University.

The Problems of the State University with Reference to the Teaching of Medicine—Geo. H. Hoxie, University of Kansas.

The Equipment of the Medical College—Fred C. Zapffe, University of Illinois.

Each of the papers was discussed from the floor and many valuable points were brought out. The paper on the Equipment of the Medical College was of especial value, since it represents the first attempt to bring together the opinions of competent teachers as to what constitutes a minimum standard equipment in each of the laboratory subjects. These four papers as well as the President's address will be published in full in the transactions of the Association.

In the evening the retiring President, H. B. Ward, Dean of the Medical Department of the University of Nebraska, gave his address. In this he sketched the history of the Association and its influence upon the raising of medical standards; he also showed its relation to several other bodies that have the same end in view, and made it evident that this Association is in a position to do much in the near future toward the betterment of the medical standard training.

Following the President's address, a smoker was given in the club rooms of the Medical Library to the visiting delegates and guests and to the local profession.

The morning session of the second day was taken up with matters of business and discussion of committee reports. The judicial council, which is the acting governing committee of this Association, reported favorably upon the applications of the Medical Department of the University of Wisconsin and of the University and Bellevue Medical College of New York City. These two schools were elected to membership. The applications of five other schools were refused because upon personal investigation, by officers of the Association, it had been found that these schools were not at present giving a medical course up to the standards published by the Association. Five schools which had been members were dropped from membership because they had failed to maintain the standards of teaching which membership in the Association requires. The Association has been active in recent years in weeding out the weaker schools and in advancing standards, so that now membership in it is a guarantee of the maintainance of the published requirements of the Association.

One of the most important actions of this meeting was the passing of a resolution by unanimous vote, that it was the policy of the Association to advance the entrance requirements beyond the present four-year high school course. This advance will be in the nature of required subjects and number of points required for admission. The Association does not believe that the "one year of college work including chemistry, physics, biology and German" is a feasible thing. It has been shown conclusively that this one year is a very indefinite training and further that very few colleges in the country are able to give these four subjects to a student in a single year. The mere fact that a large number of comparatively weak institutions have announced their intention to make a requirement of one year of college work in 1910 is by no means assurance that such requirement will actually be made, since some of these schools at present are admitting men directly from the grammar school.

Certain minor changes were made in the entrance requirement of the Association to bring these in full accord with those maintained by the Confederation of Medical Examining and Licensing Boards.

Following the morning session the local committee gave a luncheon to the visiting delegates and after this the delegates visited the medical schools and hospitals of the city.

The next meeting will be held in New York City, March 15, 1909, under the Presidency of E. H. Long, of Buffalo.

Over seven thousand dollars in prizes for exhibits and essays relating to Tuberculosis.—Five prizes of $1,000 each and seven of $100 are offered by the International Congress on Tuberculosis as follows: 1st, For the best evidence of effective work by a voluntary association for the prevention or relief of tuberculosis; 2d, for the best exhibit of a furnished house for a family, or a group of families in the working class; 3d, for the best exhibit of an existing sanatorium for the treatment of tuberculosis among the working classes; 4th, for the best exhibit of a dispensary or kindred institution for the treatment of the tuberculous poor; 5th, for the best exhibit of a hospital for advanced pulmonary tuberculosis. The Congress also offers prizes of $100 each for seven educational leaflets of from one to two thousand words, addressed to (a) adults generally, (b) teachers, (c) mothers, (d) indoor workers, (e) dairy farmers, (f) grammar school children, and (g) primary school children, the latter to be pictorial in character. The Smithsonian Institution offers a prize of $1,500 for the best treatise submitted on the Relation of Atmospheric Air to Tuberculosis. Numerous medals are also offered for exhibits in allied lines. Full details regarding the forms in which essays are submitted will be furnished by Dr. Thomas G. Ashton, 1814 South Rittenhouse Square, Philadelphia, secretary of the Committee on Prizes.

The following new books, etc., have been recently added to the Cleveland Medical Library

By Purchase:
- Wm. Osler, Modern Medicine, Vols. 1-3.
- Wm. Osler, The Growth of Truth.
- J. H. Parsons, The Neurology of Vision.
- Chas. Mercier, Criminal Responsibility.
- C. L. Greene, Examination for Life Insurance.
- T. W. Jackson, Tropical Medicine.
- F. W. Hewitt, Anaesthetics.
- von Bardeleben, Applied Anatomy.
- W. H. Park, Pathogenic Bacteria and Protozoa.
- C. A. Herter, Chemical Pathology.
- R. W. Wilcox, Treatment of Disease.
- Morris & McMurrich, Anatomy.
- L. Bianchi, Text-Book of Psychiatry.
- von Neusser, Disorders of Respiration and Circulation.
- Robson & Cammidge, The Pancreas, its Surgery and Pathology.
- E. L. Keyes, Jr., Syphilis.
- Nothnagel's Encyclopaedia, Diseases of the Heart.
- Karl Schleip, Haematological Atlas.
- L. Duncan Bulkley, Skin and Internal Disorders.
- J. W. S. Gouley, Surgery of Genito-Urinary Organs.
- August Bier, Hyperemia as a Therapeutic Agent (English Translation).
- Piersol's Anatomy.
- S. J. Gee, Medical Lectures and Clinical Aphorisms.
- E. M. Brockbank, Life Insurance and General Practice.
- Green & Brooks, Diseases of Genito-Urinary Organs and Kidneys.
- M. D. Stevenson, Photoscopy (Skiascopy or Retinoscopy).
- Haab & DeSchweinitz, Operative Ophthalmology.
- Haab & De Schweinitz, External Diseases of the Eye.
- S. Theobald, Prevalent Diseases of the Eye.
- H. Fletcher, The A. B. C. of our own Nutrition.
- R. H. Chittenden, Physiological Economy in Nutrition.
- L. Luciani, Physiologie des Menschen (Vol. 3).

The following Journals have also been added to the files:
- Archives of Diagnosis.
- Archives of Internal Medicine.
- Proceedings of the Royal Society of Medicine.
- Zeitschrift für Urologie.

Donations are as follows:
- C. H. Weaver, Chicago, Ill., 4 Volumes, Transactions Chicago Pathological Society.
- H. E. Handerson, M. D. Janus for 1907.
- D. Wilkins, Leges Anglo-Saxonicae, etc., 1721.
- D. P. Allen, M. D., 6 Bound Volumes; 5 Unbound Volumes; 175 Pamphlets.
- Mrs. H. W. Kitchen, 33 Bound Volumes.

F. C. Taylor, M. D., 75 Bound Volumes.

H. O. Feiss, M. D., Zeitschrift für Orthopädische Chirurgie, 7 Volumes.
Archiv für Orthopädie, Mechanotherapie, etc., 4 volumes.
Fortschritte a. d. Gebiete der Röntgenstrahlen, 3 Volumes.
Zentralblatt für Chirurgische und Mechanische Orthopädie, 1 Volume
Revue D'Orthopedie, 1 Volume.

Through the kindness of Dr Feiss, the Library is receiving the above mentioned journals as they are published.

Ralph King, Esq., through H. H. Powell, M. D.
P. Budin, The Nursling.
Le Grand Kerr., Diagnostics of Diseases of Children.
L. E. Holt, Diseases of Infancy and Childhood.
Drs Bunts, Crile and Lower, 68 Bound Volumes; 4 Volumes Unbound.
C. A. Hamann, M. D., 5 Volumes.
F. C. Heath, M. D., Tr. Indiana State Medical Society.
Dr J. G. Mumford, through E. F. Cushing, M. D., Surgical Aspects of Digestive Disorders.

Medicine in America.

F. C. Herrick, M. D., 12 Bound Volumes; 8 Unbound.
J. Riddle Goffe, M. D., Tr. American Gyn. Society.
S. S. Cohen, M. D., Tr. Association of American Physicians.
G. W. Crile, M. D., 8 Volumes Unbound.
A. R. Baker, M. D., 5 Volumes Unbound and 6 Numbers of Journals.
D. H. Beckwith, M. D., Tr. American Institute of Homeopathy.
H. S. Upson, M. D., Strümpell and Jakob, Neurologische Wandtafeln.
Roswell Park, M. D., Buffalo, N. Y., Reports of Cancer Laboratory.
E. F. Cushing, M. D., 35 Bound Volumes; 12 Unbound Volumes; 85 Pamphlets.
Mrs. M. T. Silver, 4 Bound Volumes.
Hunter Robb, M. D., 11 Volumes Unbound.
Dr A. S. Cooley, 4 Volumes Proceedings American Veterinary Association.
Cleveland Medical Journal, 300 Numbers of Journals, Various.

TO THE PHYSICIANS OF CLEVELAND AND VICINITY

Do not destroy any literature on medical, scientific and allied subjects, until you have consulted the Cleveland Medical Library.

If you have a lot of medical or scientific books, periodicals, pamphlets, etc., stored in the garret or cellar, don't call in the junk man; first call Central 7009 W, or North 601; or, if you prefer it, send a post card to the Cleveland Medical Library Association, 2318 Prospect Ave. We will gladly send a man, if necessary with a wagon, to remove them. The Library will be glad to receive any donation of literature on medical, or any of the allied sciences, no matter how small or how large it may be.

If outside of the city send by freight, if a large amount, or by express if a small package.

Deaths

Orin D. Childs died at his home in Akron, O., March 2, 1908, aged 67.

W. M. Teetzel, of this city, a graduate of Trinity Medical College, Toronto, Ontario, 1896, died at St. Clair Hospital, March 18, 1908.

Roy O. Totten, of this city, a graduate of the Cleveland University of Medicine and Surgery, 1906, died from fracture of the skull, March 13, 1908.

Edwin D. Warner, of Geneva, Ohio, died March 16, 1908, aged 52 years.

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Longevity in its Relation to Preventable Causes of Early Death

By D. S. HANSON, M. D.

The causes of premature or early deaths are of two classes, hereditary and acquired. I know that the former has been much modified in the minds of investigators, some going so far as to deny any influence it may have and attributing each and every change to environment alone; again others as vehemently claim a natural and an acquired heredity; as examples of the latter they refer to the gradual changes that have so often been seen in the instincts of the different races in conformity to change of location, habits and environments, and we might with propriety refer to the Jews as a people that have developed the trading instinct, and the Japanese that from years of discipline have become a nation with fighting instincts. As examples of the influence of natural heredity, we will mention some in the vegetable and animal kingdom as well as in man.

The farmer knows full well that if he plants poor seed, however good the environment, he will glean a poorer crop than he would have done had he selected the best seed procurable; a conspicuous example is the demonstration made by our own Government in the cultivation of corn from superior seed, the ears have been improved in size, the kernels lengthened and made to cover the cob more fully and the number of kernels on the cob increased.

The stock breeder does not breed from the plow horse if he wishes to produce trotting stock, nor from the runner if he wishes a horse for agricultural purposes. We might quote innumerable examples of this sort, for they are apparent at every hand.

Read before the Academy of Medicine of Cleveland, January 17, 1908

As an example of hereditary influences we wish to note that some of our States have recognized the fact that the progeny of habitual criminals, insane families, epileptics, sexual perverts, etc., do not make good citizens.

In the State of Indiana vasectomy was performed on no less than 300 males of this character at one State Institution in 1906, and other States have taken less efficient measures along this line.

After quoting only such a small number of examples, one can hardly get away from the fact that heredity certainly assists environment either for the benefit or destruction of the peoples of the earth; yet, in spite of the facts enumerated, we believe heredity can be pretty well obliterated if the proper environment can be sufficiently prolonged with weeding out of the reversions.

Gorafalo says that strongly marked moral character, whether good or bad, never persists in one family for more than five generations; he furthermore says that most criminals are so by inheritance, chance criminals rarely exist, and according to a paper read in this room, we are all naturally savages (Millikin).

The question naturally arises, what are the causes both hereditary and acquired that cause degeneracy of the human race? and, conversely, what has prevented those influences from totally destroying us both physically and mentally? In seeking the main causes of degeneracy and of the shortening of human life, we shall not try to separate physical and mental, for they are so interdependent that in a general discussion, in which one is not trying to individualize too sharply, they are practically one.

There hardly could be a question about placing disease as the first and most important cause, although usually dependent upon other conditions. Secondly, food, or rather want of it, no doubt has been a great factor and, like disease, has wrought fearful destruction. Third comes alcohol and narcotics. Fourth, war with its attendant horrors. Fifth, sexual abuses. Sixth, numerous minor causes, such as intermarriage, and this applies to nations, as well as individuals, overwork, and numerous bad hygienic influences, such as impure air, urban life, mental exhaustion in our schools, from overpressure, etc.

Disease: This, of course, is the one item that is of the most interest to us as physicians, and the one in which we pride ourselves upon the fact that we have done much to stay its ravages, but at the same time we are painfully aware that the task yet to be performed is herculean in extent.

In this discussion we are mainly concerned with preventable diseases, for they are the ones that cause so much needless destruction of human life. The two that at the present time are doing the most harm are tuberculosis and venereal diseases. The latter is extremely prevalent in all nations and climes. Almost coextensive with the human race, syphilis has been very destructive when first introduced into a non-immune community. In countries where it has been present for more or less prolonged periods of time, the greatest destruction is to infantile life, about 80% of pregnancies in untreated syphilitic mothers resulting in abortion. However, the death rate *per se* does not in any sense measure the great injury done by this most offensive disease; nervous diseases, dwarfed and deformed children, blindness, skin affections, bone diseases, and many other conditions that lead to suffering and an early death result from it. The hereditary taint of this disease has done and is doing more harm to the human race than any one could imagine who has not closely studied the subject. Gonorrhea we now know is causing thousands of deaths in the female sex every year, and the suffering and misery in many old men from genito-urinary diseases, resulting from this terrible disease, can be seen on every hand.

Tuberculosis is also coextensive with the human race, causing loss, suffering and death everywhere. Careful research during the last few years has happily given us a correct understanding of the real causes of this disease, as well as a more accurate knowledge of the frequency of its occurrence. It is not necessary to go into statistics to prove to you that tuberculosis causes a greater death rate, a greater loss of earning power, more expense and suffering than any other disease. It is said that in the United States alone the victims number not less than 150,000 annually and that the cost of invalidism and death is not less than $330,000,000.

Malaria is another disease that has done much to lessen the average length of life, and we refer to it not only because it has made the low lands in the tropics almost uninhabitable to the white races, but because we wish later in this paper to speak of the magnificent work done by our profession in its prophylaxis and cure.

Yellow fever is another disease that has counted its victims by the millions, making great and frequent inroads into the inhabitants of tropical and semitropical countries.

The most formidable disease, the plague, for centuries has swept away vast numbers of people; prophylaxis and treatment both have been in vain until quite recently, a matter that will be spoken of later.

That disease called sleeping-sickness, so uniformly and absolutely fatal, and of which recent investigations have shown us so much, will be spoken of later when discussing prophylaxis.

The contagious diseases of childhood have caused millions of needless deaths, and only in comparatively recent times have any efficient means been used for their prophylaxis and control. In the cities placarding houses, isolating the sick, giving immunizing serum, etc., have been followed out more or less vigorously, but in the rural districts little advance has been made.

Among the acute preventable diseases, prominently to be mentioned, is typhoid fever; even in the present enlightened condition regarding the cause thereof cases are nearly as numerous as ever.

Food: The longevity of the human race has been greatly modified by food, both with reference to quantity and quality. The average length of life has been markedly reduced through starvation, although probably at no time in history, with which we are acquainted, was the food supply inadequate for the needs, had transportation facilities been such that transference could have been quickly done. On the other hand, a great many people in civilized countries are greatly shortening their lives by a too free indulgence in too great a variety of foods, while impure food has caused much suffering and many deaths. Then it may truthfully be said that one of the great problems relative to the length of human existence is, the quantity, the quality and the regularity of taking of the food, and the best interests are conserved when well cooked food of good quality is consumed in moderate amounts.

Alcohol and narcotics: When contemplating what alcohol has done and is now doing to shorten human life, the endless suffering it has produced and is still causing, the hereditary blights it has put upon unborn millions and is now forcing on the innocent and the great number of sick, crippled, mentally incompetent, criminals, insane, and paupers produced through its baneful influence one is truly appalled.

Fernet says, that from 150 to 200 deaths out of every 1,000 in Paris are due either directly or indirectly to alcohol, and that this fact should be made known in the daily press, so that every one could understand it.

There is an old French adage that says "tuberculosis is contracted over the bar," and it would not be far out of the way if it included syphilis as well; of 1,200,000 children born in Great Britain yearly, one-third are in dire squalor and poverty, largely due to alcoholic habits of parents. Kebynach says, that in England 80% of the adult consumptives are chronic alcoholics. The Scandinavians, through small distilleries scattered everywhere over the rural districts during the middle of the last century, noticed that the army recruits were growing shorter in stature and that rejections were becoming much more numerous; investigation showed the cause to be alcohol; the distilleries were abolished, making it much more difficult to procure drink (the only effective way to produce temperance), with the result that after a few years normal conditions were restored.

France is pretty thoroughly alive to the fact that alcohol is a very important factor in the so-called race suicide of that republic. England today with its child labor in factories and mines, and its utter lack of educational facilities for the masses, is only in a minor degree injured thereby as compared to the destruction of health and shortening of life, both directly and by heredity, due to the consumption of alcoholic drinks. Coming closer home I might say much more, for I have seen so much degradation, trouble and suffering coming from this traffic that I sometimes feel like supplanting the word "alcohol" for "money" in the quotation "money is the root of all evil." But as this is not a temperance lecture, I shall not further unburden myself on this topic.

Narcotics, although not to be compared to the alcohol, is still a great evil. It is said that in China today 100,000,000 people, 15,000,000 more than the entire population of the United States, smoke opium; the degradation, sapped vitality, and abridged length of life occasioned thereby is almost beyond belief. The evil effects of tobacco is a subject open to discussion; personally I believe its excessive use often causes arterial disease, many cases of apoplexy being due to this cause, and a poor innervation of the digestive organs often is produced in the same way. It is certainly effective for evil in the very young.

War: That war is a calamity, taking off the very flower of the countries engaged, by wounds and disease, leaving behind the old, crippled and diseased to repopulate them, goes without saying. This can very consistently be compared to the illustration in the early part of this paper of the farmer selecting poor seed when planting. War for conquest is always inexcusable, and the death caused thereby is akin to murder, while those of the most meritorious character have little excuse for existence. Modern equipment now used is much more destructive than that used in times past, yet modern treatment of wounds and prophylaxis of disease—thanks to our profession—more than compensates for the great efficiency of the weapons of destruction. Again, the wholesale destruction of prisoners, so common in the past, is now very generally replaced by humane treatment, and the murder of innocent women and children, so commonly recorded in history of wars, is probably no longer to be reckoned with, when recording the unnecessary causes of early deaths.

Sexual abuses: That this evil deserves the prominence given in this paper may be doubted by many, but years of observation and experience have convinced me that it is everywhere present, doing incalculable mischief. This function was given for the sole purpose of procreation, as witness the entire female animal creation. They, metaphorically speaking, protecting their own virtue, while the human has gone on century after century cultivating abnormal sexual desires, until through hereditary influences we have thousands of sexual perverts, many of whom die prematurely from insanity, paralysis, atheroma, alcoholism and other chronic diseases, and thousands more succumb to acute diseases because their powers of resistance and immunity have been lowered. Besides all this, they often become worthless fathers and mothers of children, even more untrustworthy than their parents.

This is a matter so delicate to handle, so repulsive to people of any degree of refinement, that the subject is quite generally avoided in the presence of young people, yet could they fully understand the importance of the subject, so as to be enabled to avoid its pitfalls, and thereby more nearly do justice to themselves and others who may depend upon them, they would certainly be greatly benefited thereby. "To be forewarned would be to be forearmed."

The numerous minor causes not above enumerated will not be gone into fully for want of time and only a few of the most prominent mentioned. Intermarriage tends to sterility and inferior physical and mental development in both national and personal cases. Many examples could be given to prove both, but one will be mentioned, because one will hardly question the accuracy of the statement.

History gives numerous examples of nations having been invigorated by the wholesale invasion of nations of an alien blood; in fact some of the most virile nations in existence today owe their progress and national strength largely to this fact. The intermixture of the many nationalities now going on in this country promises much for our future, not only relative to health and increasing the average length of life, but general progress to a degree hardly equalled in history.

Overwork is no doubt a real factor in premature decay and early death; the rural population of this country today are working beyond their strength. A few years ago I had occasion to review a large number of country people a few miles from this city. They passed single file in front of where I was sitting, and in that company not one well kept, erect, vigorous person was to be seen; they not only were physically imperfect, but most of them markedly so, stooping shoulders, one being higher than the other, and crooked spines being the rule; their color was uniformly bad and their figures were too spare, clearly the result of too much work and too long hours. Urban life, which is now so rapidly increasing, has many factors that tend to produce disease and early death, such as indoor work, breathing dusty, smoky air, mental exhaustion due to the energy expended to meet active competition, which causes many breakdowns. The present methods in this country of crowding school children beyond their mental capacity must, and I am sure will be greatly modified in the near future, for the good sense of our American people will finally assert itself, and necessary reforms will be instituted.

I am fully aware that it is much easier to criticise present methods than to originate new and better ones and I do not make the above criticisms in a fault-finding spirit.

As medical men I am sure we should study these children closely and differentiate between mental exhaustion that requires rest, and other things for which we give alteratives, tonics, etc. There can be no question about the injury done to our race in civilized coutries, by this overwork of the minds of our children. This statement no doubt you will at first regard as extravagant, but I will ask you to look closely into the matter; if you have children of your own, review their past, and many of you will see that they might have been better developed had they been kept in a more normal condition. Many more causes of our early decay and premature death might be mentioned but the main ones have been gone over, and now the question arises, What are we doing to "stem the tide" and prevent this fearful and unnecessary sacrifice of human lives? And right here is where I approach the part of this paper that I delight to read.

For the last quarter of a century, since his initial discovery, have we regarded the immortal Pasteur with a reverence almost sublime, and the great Koch and Lister, who immediately supported and extended his discoveries, are honored with little less enthusiasm.

Many more are deserving of the highest encomium for their investigations in shôwing the real cause of certain diseases and the cause and cure of others. What then have they really done to lengthen the average length of human lives? We will try to enumerate the most prominent and striking of them:

The discovery of the germs that cause suppuration has made modern surgery possible. What that has done for diagnosis of disease, mitigation of suffering, and prolongation of life, need only be mentioned to be appreciated.

The discovery of the tuberculosis bacillus has revolutionized the treatment of that disease and rendered a certain diagnosis possible. The fact that this is appreciated is shown by the efforts being made, by the most civilized nations on the globe, to institute methods of prophylaxis and treatment along modern lines. Germany excels in sanatoria; England in hospitals for advanced cases; France in special sanatoria for children, while we have in our cities the best registration and municipal control. What we now need is to keep public enthusiasm with us, to the end that liberal expenditures will be granted to the workers in this field, thereby enabling them, at least measurably, to stay the ravages of this, our worst enemy.

The discovery of the malarial plasmodium has been and no doubt will be ranked as one of the great achievements of our profession, and makes intelligent prophylaxis of that disease possible.

In yellow fever, again, results so brilliant, as fairly to awaken the entire world, have been achieved, and what was once a terrible scourge is now under our control.

The work upon that dreadful disease, the plague, ranks well with any work ever done for the protection of the lives and health of the human race.

Again, we are very proud of the results obtained from the researches quite recently made in sleeping-sickness.

The story of smallpox is an old one but nevertheless the death and deformities, which are now only conspicuous by their absence, before the days of vaccination, made it the most dreaded of diseases.

The discovery of the cause of diphtheria, and the production of a specific serum for its cure, is one of the wonders of the age; as a measure for the prevention of suffering and death it has no equal.

The specific causes of many more diseases have been discovered and the necessary measures for their prophylaxis are well known, prominent among such diseases is typhoid fever.

By what has been said it can plainly be seen that certain great men in our profession have blazed the way, and it now is "up to" the people, that are and will be benefited, to adopt the reforms so plainly suggested.

Happily much enthusiasm has been created; institutions for investigation have been established by wealthy individuals; many committees have been appointed by the various Governments, comparatively large sums of money to further investigations have been appropriated by the various countries, although the amounts are only a pittance of what they should be, for this is not only one of the most important but really the most important matter with which civilized countries have to deal. That which goes for good health and long life comes first of all things in importance.

As a profession we should stand solidly together for all the reforms mentioned in this paper and each of us should do all possible to help educate the laity that they in turn may help us to do what we have ever been trying to do, alleviate human suffering and prolong human life.

3290 East 55th Street

The Necessity for Consent Before Performing Operations and Autopsies

By ALFRED CLUM, LL. M.
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A physician in undertaking the treatment of a case is charged with the duties of exercising his best judgment, and bringing the degree of skill and care that is used by the ordinary physician in similar localities and under like circumstances. Suppose that in the progress of the treatment the physician believes a major operation necessary in order to produce the best results. What is necessary before proceeding with the knife? The rule can be briefly stated that no physician or surgeon can with legal safety perform a major operation without first obtaining the consent of the person upon whom the operation is contemplated; and in case of the inability of such person to give consent, by reason of tender years, or enfeebled intellect, then the consent of the parent or guardian or other person standing *in loco parentis,* must be first procured.

As was said in the case of Pratt vs. Davis (37 Chicago Legal News 213): "Under a free government at least, the free citizen's first and greatest right, which underlies all others—the right to the inviolability of his person, in other words the right to himself—is the subject of universal acquiescence." This right forbids a surgeon to violate without permission the bodily integrity of his patient. One of the textbook writers (Kinkead on Torts, Section 375) says: "A patient must be the final arbiter as to whether he shall take his chances with the operation, or take his chance of living without it. Such is the natural right of the individual which the law recognizes as a legal one."

Not only must consent be obtained to an operation, but it is important that the patient assent to the particular kind of operation, and that the parts to be operated upon be specifically designated. This doctrine is illustrated by the following cases:

In Minnesota a case arose in which the patient had difficulty with his *right* ear, and its hearing was impaired. He consulted a physician who was a specialist on diseases of the ear. The doctor examined the organ and found a large perforation in the lower portion of the drum membrane and a large polyp in the middle ear indicating diseased ossicles. He thereupon advised an operation on the same, to which the patient consented. The patient requested that his family physician be present at the examination, and it was so arranged. After placing the patient under an anesthetic, and while he was unconscious, the doctor examined the *left* ear and found it in a more serious condition than the right ear, and in greater need of an operation. He found a large perforation high in the drum membrane, hooded, and with granulated edges, and the bone of the inner wall of the middle ear was diseased and dead. He called the attention of the patient's family physician to the condition discovered, and the specialist recommended to this physician that the operation be performed on the *left* ear. The family physician made no objection. It was true that the patient had never previously manifested any difficulty in hearing with his left ear, nor had he known of any trouble therein existing up to the time of said operation. The specialist performed the operation on the left ear, and the operation was in every way successful and was skilfully performed. However, after the operation, the hearing of the left ear was seriously impaired and the patient brought an action against the specialist for damages for assault and battery, based on the facts above mentioned. Upon trial the evidence showed the facts as herein stated, and the court held that the operation was a violation of the rights of the patient, unless the specialist could show that the patient had either expressly or impliedly consented to the operation on the left ear. Clearly there was no express consent and the question as to whether or not there was implied consent was left to the jury, which decided that there was no such implied consent and returned a verdict in favor of the patient. This verdict was sustained and judgment entered (Mohr vs. Williams, 95 Minn. 261, June 23, 1905; s. c. 1 L. R. A.—N. S.—439).

Another case involving a similar legal question arose when a woman sued a physician for damages for trespass on the person. This case also stands for the law that the consent of the husband is no legal substitute for the consent of the wife, when the latter is to be the subject of the operation. The facts in this case of Pratt vs. Davis, are as follows: Mrs. Davis was about 40 years of age, and ever since her young womanhood had been afflicted with epilepsy. Dr Pratt was a physician at a hospital and had acquired quite a reputation in the treatment of epilepsy. The husband of Mrs. Davis, through his brother, heard of Dr Pratt, and subsequently the husband and wife went to consult with the doctor. At that time neither Mrs. nor Mr. Davis were told of any serious operation as being either necessary or contemplated. The doctor upon examination found a condition of the pelvic organs which required a minor operation and local treatment. He told Mrs. Davis only enough to get her consent to be operated upon, but all the operations spoken of were minor operations; and if Dr Pratt anticipated any more serious treatment he did not make his suspicions clearly known to the patient nor to her husband. Mrs. Davis went to the hospital, was operated upon for those purposes "appearing on the surface," as the doctor described them. She remained four weeks, but during this time she was not told of any other operation involving the removal of some of the pelvic organs, as being either probably necessary or desirable.

When Mr. Davis took his wife away from the sanatorium Dr Pratt told him that he would like to have Mrs. Davis back for a little further treatment—on account of some little irritation—after she had been a week or two at home. A few weeks subsequently, Mr. Davis was suddenly called away from home on a business trip, and his brother took Mrs. Davis back to the sanatorium in accordance with the request of Dr Pratt. The husband also testified that Mrs. Davis had said to Dr Pratt, in the presence of her husband, when leaving the hospital after the first treatment, that she would not consent to any further operation; and nothing definite was said to Mrs. Davis upon her return to the sanatorium. The means used to get her under the influence of anesthetics was not clearly established, there being some evidence to indicate that the same may have been administered to her while asleep, and that she was then carried in an unconscious condition to the operating room. She was immediately operated upon, this time a major operation being performed and an internal organ removed. Dr Pratt testified that he had seen the patient's husband during the interval that she was at home after her first operation, and had given him to understand that an operation was contemplated similar to that which was later performed, and that the husband assented thereto. The court held that whether or not such consent of the husband was obtained made little difference, inasmuch as it was the consent of the wife and not that of the husband that was necessary. Dr Pratt undertook to show that the mental condition of Mrs. Davis was so impaired that she was not capable of consenting or withholding a consent to such an operation; indeed, that her "mental condition was such that it was impossible to take her into advisement on her own case." The weight of the testimony, however, showed that, except during a fit of epilepsy and for a short period following such seizures, Mrs. Davis was in full possession of her mental faculties; and in view of this testimony as to her mental condition, the court commented on the alleged consent on the part of the husband as follows: "It would be a proposition utterly repugnant to the ideas of an advanced civilization that a husband, merely by virtue of the marriage relation, could thus control and dispose of his wife's person."

The trial court in this case in fixing damages allowed also *exemplary damages* and rendered a judgment for $3,000.00

against Dr Pratt. The case was carried to the Appellate Court of Illinois, First District, and it was there held that: "The law implies damages when any trespass on the person of another is committed. It infers bodily pain and suffering from such an act, and allows damages for them, however difficult they may be of ascertainment or apportionment." The Appellate Court in approving the action of the trial court in allowing *exemplary damages* said, in speaking of the degree of malice necessary to support a claim for exemplary damages: "If the act was an unauthorized trespass on the body of the plaintiff, if it is an act, in other words, in the mutilation of her body, which he knew, or in the eye of the law was bound to know, he had no legal right to do, the absence of such a morally evil intention, as before intimated, does not relieve it from the imputation of malice in the legal sense."

It is well settled law that the husband is personally liable for the cost and expense of operations performed in good faith for the preservation or prolongation of the life of the wife, and to which she has consented, although the husband may not even have known of the nature and extent of the operation, or that indeed an operation was to be performed. It is also a rule that the consent of the patient to an operation will be presumed from the mere fact that the patient submitted to the operation; but this presumption is not conclusive. It only means that the burden of proving that there was no consent rests on the party who denies the consent. The following cases illustrate the conclusions just stated:

Some years ago a family of Mr. X. resided in Massachusetts and became acquainted with a physician who practised in that neighborhood and incidentally treated the family of X. Later the physician moved to Nassau, New York, some 65 miles distant. Years passed and Mrs. X. became afflicted with what was supposed to be a "scrofulous humor" in the breast. For two years this affliction continued but she was able to be about the house and attend to her usual domestic duties. Mr. and Mrs. X. then went to Nassau, N. Y., and the wife remained there for treatment by the same physician whom they had previously known in Massachusetts. The physician told Mr. and Mrs. X. that the "scrofulous humor" was not a cancer nor was it cancerous. Mr. X. went home, and some 10 weeks followed, during which time he did not hear anything from the physician and very little if anything from his wife as to her physical condition. After about 10 weeks the doctor operated upon Mrs. X. for what he diagnosed as a cancer by "amputating her breast," and she died about one week later. Subsequently the physician brought suit against Mr. X. for his bill, including a charge for amputating the wife's breast. The court, before which the case was first tried, held that "as it did not appear that the wife had a cancer or cancerous humor when her husband put her under the care of the physician, the latter was not authorized to perform an operation so as to charge the husband, without proving that the operation was necessary and proper under the circumstances; that before operating he gave notice, or that it would have been dangerous to the wife to wait before he performed the operation, till notice could be given the husband." The case was carried to the Supreme Court of Massachusetts and that court reversed the lower court and held as follows: "The defendant by placing his wife under the care of the physician whom he knew, at a distance from his residence, for medical and surgical treatment for a dangerous disease, impliedly requested him to do all such acts and adopt such course of treatment and operations as in his judgment would most likely effect her cure and recovery, with the assent of the wife; and, therefore, that operation was within the scope of his authority. The assent of the wife to the operation *was to be presumed* from the circumstances. The court also held that the burden of establishing the lack of authority, and the *absence of consent on the part of the wife,* rested upon the husband and not upon the physician. (McClallen vs. Adams, 36 Mass. 333).

A more recent case arose in Baltimore, Maryland, (Janney vs. Housekeeper, 70 Md. 162). Mrs. Janney together with her husband consulted Dr Housekeeper who diagnosed the case as that of a tumor and advised an operation. Accordingly preparations were made for the same. The operation was performed and the wife lived a number of months and then died. The husband then brought suit against Dr Housekeeper for wrongfully causing the death of his wife, and at the trial he testified that, when he took his wife to Dr Housekeeper, he expressed a willingness that his wife should be operated upon for the tumor, which operation, it was explained, would be a short and simple one, but that he objected to the removal of the formation in the breast if it was found to be a cancer. There was evidence introduced from which the jury might infer *that the wife knew* that the formation in her breast was a cancer. There was also some evidence tending to show that the immediate cause of the wife's death was due to "tuberculous meningitis," unconnected with the operation, and that the wounds incident to the operation had healed. The jury returned a verdict in favor of the physician. The Supreme Court of Maryland in discussing the legal effect of the husband's testimony and the question of the wife's consent said: "If she consented to the operation the doctors were justified in performing it, if after consultation they deemed it necessary for the preservation or prolongation of the patient's life. The law does not authorize a husband to say to his wife, you shall die of a cancer; you can not be cured, and a surgical operation furnishing only temporary relief, will result in useless expense. The husband has no power to withhold from his wife the medical assistance which her case might require * * * * * The consent of the wife, not that of the husband, was necessary. * * * * * * They (the physicians) could not compel her to submit to an operation, but if she voluntarily submitted to its performance, her consent will be presumed, unless she was a victim of false and fraudulent misrepresentation, which is a material claim to be established by proof. If the plaintiff alleges that there was no consent he must establish this affirmation by proof. The party who allows a surgical operation to be performed is presumed to have employed the surgeon for that particular purpose."

AUTOPSIES

Thus far we have considered the law relative to consent before operating upon the living, but what says the law with relation to consent before performing postmortem examinations? The moment life leaves the body, the character of that which remains has been a quite fruitful subject for legal discussion. Courts have frequently declared what it was not; but it is with some hesitancy that they have attempted to declare what it is. The law has said that the dead body is not "property" in the strict sense of that word as used in legal parlance. If one steals a dead body he has not committed larceny at common law; but if one were to steal the coffin in which the corpse is interred, or to carry off the clothes found upon the body, or to take the shroud, that would be larceny. Following this early view of the law and resulting from the custom of our English forefathers of burying their dead in the churchyard, there grew up something of a conflict of jurisdiction between the courts of common law and the ecclesiastical tribunals. The law courts would take cognizance of any offense committed against the land wherein the body might be buried, or against the tombstone or other physical property placed in or about the grave of the deceased; but the protection of the body of the deceased was considered as falling within the jurisdiction of the ecclesiastics. Lord Coke (3 Inst. 203) says: "In every sepulchre that hath a monument two things are to be considered, viz., the monument, and the sepulchre or burial of the dead. The burial of the cadaver that is *caro data vermilius* (flesh given to worms) *is nullius in bonnis,* and belongs to ecclesiastical cognizance; but as to the monument, action is given at the common law for defacing thereof." And Lord Coke says (Inst. 418 b), "If a nobleman, knight, esquire, etc., be buried in a church and have his coat armour, with his arms, and such other insigns of honour as belong to his degree, or order, set up in the church; or if a gravestone be laid or made for memory of him, albeit the freehold of the church be in the parson, and that these be annexed to the freehold yet, cannot the parson, or any, take or deface them, but he is subject to an action to the heirs and his heirs, in the honour and memory of whose ancestor they were set up."

When the American Revolution separated the Colonies of America from the mother country the ecclesiastical law and the jurisdiction of the ecclesiastical courts were refused a permanent residence in American soil, and the courts, feeling bound by the rules of the common law, had some difficulty in adjusting themselves to the new conditions, and the requirements incident thereto, with relation to the bodies of the deceased. The courts early recognized that some means must be found to protect the rights which those, nearest to one in life, feel they have the right to maintain over all that remains of their friend or companion when life has left the body.

The law in the United States may be considered as establishing in the next of kin a certain right to the body of the dead which closely simulates "property" although the courts have not gone so far as to declare it to be "property." They have said in no uncertain terms that this right is a valuable right, and that it is such a right that, when unlawfully interfered with, compensation in damages may be awarded. This is an instance in which the court feels the power of precedent, and contemporaneously the necessity for relief from what would be the logical consequence of the technical precedent; and it is interesting to notice the manner in which courts overcame the difficulties presented. In a case in Rhode Island (Pierce vs. Propritors, etc., 10 R. I. 227) the court uses this language: "That there is no right of property in the dead body, using the word in its ordinary sense, may well be admitted, yet the burial of the dead is a subject which interests the feelings of mankind to a much greater degree than many matters of actual property." Again the court says: "There is a duty imposed by the universal feelings of mankind to be discharged by someone toward the dead, a duty and we may also say a right to protect from violation, and a duty on the part of others to abstain from violation; and it may therefore be considered as a sort of *quasi* property; and it would be discreditable in any system of law not to provide a remedy in such a case." In a case in New York State, (Foley vs. Phelps, 37 N. Y. Sup. 471), the court refers to the narrow view of the ancient lawyers on this subject, when this language is used: "No such thing as property in human remains is the general doctrine of the law courts, but courts of equity have frequently interfered to protect the remains of the dead (as by injunction) and the courts of law have also afforded remedies wherever an element of *trespass to property,* real or personal, is associated with the molestation of the remains." The court again says: "Irrespective to any claim of property, the right which inhered in the plaintiff, as decedent's widow, was the right to the possession of the body for the purpose of burial. In the case last cited, Foley vs. Phelps, the husband fell through an elevator shaft, May 16, 1894, and was taken in an unconscious condition to the Bellevue Hospital, where after three hours he died. The wife alleged that she learned of her husband's accident and death, and immediately notified those in charge of her husband's body not to perform an autopsy and that she would send an undertaker for the remains; but that, in disregard of her orders, they detained the body and performed a postmortem examination; and she then sued for damages, basing her claim on her injured feelings. The defendant demurred to the petition on the ground that the plaintiff had no property rights in the body of the deceased. The trial court overruled the demurrer and the case was carried to the Appellate Division, where the judgment of the lower court was affirmed. In rendering the decision the court conceded the correctness of the contention that the *deceased body was not property.,* but held that the widow had "the right to the possession of the corpse in the same condition it was in when death supervened. It is the right to what remains when the breath leaves the body, and not merely to such a hacked, hewed and mutilated corpse as some stranger may choose to turn over to an afflicted relative."

In Weld vs. Walker, (130 Mass. 423) it is stated that the law in this country is that the primary duty of burying a deceased wife rests upon the husband; and in Larson vs. Chase, (47 Minn. 307) it was held that the right to the possession of the dead body of a husband, when husband and wife were living together at the time of death, is in the widow, and her right is paramount to that of the next of kin.

In the case of Larson vs. Chase, (47 Minn. 307), Mrs. Larson sued the physician for the unlawful mutilation and dissection of the body of her deceased husband, without her consent, and claimed damages on account of mental suffering and nervous shock. The defendant demurred to the petition as not stating a cause of action. This case found its way to the Supreme Court, and in a lengthy opinion the court held that a good cause of action was stated; that while the body of a deceased is not property, yet the widow, with whom he was living at the time of his death, is entitled to the possession of the same in the condition in which it was when death occurred. The court uses this language: "This right is one which the law recognizes and will protect, and for any infraction of it, such as an unlawful mutilation of the remains, an action for damages will lie. In such an action the recovery may be had for injury to the feelings and mental suffering resulting directly and proximately from the wrongful acts, although no actual pecuniary damage is alleged or proved."

In the State of Ohio I do not find that any case involving the precise question now under discussion reached the higher courts, but there are two cases worthy of notice. In one case the husband had been treated in a hospital for an abscess of the liver. He died. The attending physician made an incision for the purpose of determining the extent of the abscess. The incised wound was several inches in length and the same was sewed up and covered by an adhesive plaster. The widow brought suit against the physician for alleged mutilation of the husband's body. The court (Farley vs. Carson, 5 Ohio W. L. B.) recognized the right of the widow to recover damages for wrongful mutilation, but held that the facts in this case did not show actionable mutilation. The court said: "It was not a mutilation of the body or dismemberment or removal of any part or organ, and for all the purposes of fit and proper burial the body was left without disfigurement." As before stated this is the opinion of the lower court rendered in 1880, and is of questionable authority. Certainly there can be mutilation without dismemberment, and if one incision from four to eight inches long, penetrating to the liver, is not a disfigurement, the question naturally arises how many incisions will make a legal disfigurement, or at least an actionable one?

The material facts in the other Ohio cases are stated in the Sixth American Law Review, 182, and purport to be quoted from the "American Law Times." It appears that a wife in a fit of insanity left her home and that her husband was seeking to find her, but before he succeeded in doing so she suddenly died. The persons appearing to have custody of the remains made the following arrangements with certain surgeons, who were conducting a medical college. The surgeons were to dissect the throat of the deceased for the purpose of determining whether or not death was caused by strangulation. The surgeons promised to dissect only the throat, to perform the operation in the presence of friends, to give the body a decent burial, and also to inform the friends of the time of the funeral. It is stated that after the physicians once got possession of the corpse they perpetrated a most despicable fraud. They represented to the friends that there was danger of infection in viewing the body after the examination, and thereby deterred them from viewing the remains. The physicians then placed in the coffin a dummy made of timbers, straw and carpets, while the body was held at the college for dissection. At this time the husband appeared on the scene and brought suit for damages. The reported holding of the court was that the corpse was not so far property as to be an article of merchandise, and was not therefore subject to a contract of sale, and for this reason the law requires that some one should have the right to the custody of the body for burial, and for this purpose the law gives the right to the husband of the wife, and to the parent of the child, to the children of the parent (in the absence of husband and wife); and it would be useless to give this right if the person were not protected in its exercise. The court held in favor of the husband.

There are other decisions in Ohio fully sustaining the part of the decision last referred to, which points out the party whose right it is to give or withhold consent. One case went to the Supreme Court of the State of Ohio, but was decided without report (Park vs. Watson, 34 Bulletin 332). It appears that the husband had been buried in a certain public cemetery pursuant to his own request and in accordance with the consent of his widow. Thereafter this cemetery became much neglected and a resort for improper persons. In the meantime the widow had remarried and she then caused the body of her first husband to be reinterred in a burial lot in a neighboring cemetery, which was being properly maintained. The reinterment was made against the objection of other relatives of the deceased husband; and immediately thereafter such other relatives brought suit against the widow, now remarried, asking for a mandatory injunction, to order the widow to reinter her deceased husband in its original resting place. The prayer of the petition was denied, and the right of the widow upheld. The same right in the widow was recognized as against the claims of the children of the deceased, in Hardsell vs. Hardsell, 7 Ohio Circuit Court 196. The widow, in this case, sought to remove the remains of her husband from one part of the cemetery to another, and her action was upheld.

The same right exists in favor of the father as to the body of his child. In Massachusetts a child had been placed in a children's hospital, and subsequently died, and the hospital authorities performed an autopsy without the father's knowledge or consent, and he brought an action against the authorities for damages. The lower court sustained the demurrer of the defendants and the case was carried to the Supreme Court where the action of the lower court was reversed and the reviewing court took occasion to say: "'In the case at bar there was no executor and there could be none as the deceased was a minor. The father as the natural guardian of the child was entitled to the possession of the child for burial." The court accordingly held that the facts stated constituted a cause of action in his behalf. (Burney vs. Hospital, 169 Mass. 57.)

The state in the exercise of its police power, and in the protection of society, has empowered the coroner, or other person holding an equivalent office, to hold autopsies, when the cause of death would otherwise be uncertain. This power may be exercised not only without consent of the next of kin, but even against their express objection, and in such cases the interest of the public is of more importance than the wishes of the individual. This principle is illustrated in the two cases following:

In a case in Maryland, G. W. Young, while coupling cars on the Northern Central Railroad, sustained an injury to his right leg, the same being crushed below the knee. He was sent to the City Hospital in Baltimore and died the following day. Young had been a strong man in excellent health, and the attending physicians, who were from the College of Physicians and Surgeons, did not believe that the injury of itself was sufficient to account for his sudden death. The coroner refused to issue a certificate as to the cause of death without an autopsy, and therefore ordered another physician to make a postmortem examination, the result of which disclosed that death was due in part to the shock from the accident, and in part to fatty degeneration of the heart. This last named condition the autopsy first disclosed. The widow of Mr. Young brought suit against the coroner and the others connected with the making of the autopsy, claiming damages for wounded feelings, incident to the mutilation of her husband's body without her consent. The defense was that the autopsy was made in order to procure a certificate of cause of death which was a prerequisite to burial under the local laws of the city of Baltimore, and that by reason of such law the coroner had ordered the autopsy. It was alleged that in making the autopsy the body was unnecessarily mutilated, but from the evidence the conclusion was reached that this complaint was not well founded. The court held as a matter of law that, under the local law of Baltimore, the coroners have power to hold inquests and order autopsies to be made when, in their judgment, an autopsy is an appropriate means to ascertain the cause of a person's death, and that in such a case the coroner may order an autopsy to be made without the consent of the family of the deceased; and that the physicians making the autopsy under such order of the coroner would be equally protected from any claim on behalf of the next of kin, if the postmortem was conducted in the usual manner. (Young vs. College of Physicians and Surgeons, et al, 81 Md. 385, decided in 1895.)

Suppose one dies within a municipality where the ordinances require that a certificate stating the cause of death be first filed before a permit for burial can be obtained; suppose the circumstances of the death are such that the physician is unwilling to make such certificate without an autopsy; what then is the right and the duty of the physician? I submit that, in the event that the consent of the next of kin can not be obtained, the physician should communicate with the coroner and induce that officer to order an autopsy. In this connection it may be interesting to note Cooke vs. Walley (1 Col. Ap. 163) decided in 1891. In the municipality where the events transpired there was an ordinance requiring all physicians to certify the cause of death before burial. In this case the body of a woman was received by an undertaker from a man with whom, it was stated, she was riding at the time of her death. The undertaker could not bury the body without a physician's certificate, and accordingly called in a physician. He in turn could not state the cause of death without an autopsy, and accordingly performed the same, without hunting up the relatives of the woman. Subsequently an action for damages was brought by relatives of the woman against the undertaker and physician. The court held the action would not lie under the facts stated. The circumstances of this death were indeed unusual and were such as to demand a report to the coroner, if one existed, that proper action might follow. I have stated the case as a matter of interest, but think that it would be dangerous to rely upon this decision as justifying an autopsy without either the order of the coroner or the consent of the next of kin.

Some Observations Concerning the Submucous Resection of the Nasal Septum

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The large number of cases of deflected septa occurring in the practise of every rhinologist, the various methods of operating which have been described, and the numerous instruments devised for the different steps of this operation, are my excuses for taking up the time of the section with this much discussed subject, and it is with the view to presenting the different methods and instruments for some of the steps, rather than announcing any new ideas, that this paper is presented.

As to its importance, Freer has devoted an immense amount of time and study to perfecting the technic and instruments, and informs me that he has performed upwards of 300 operations. Killian states that there is hardly another operation in the domain of rhinology, otology or laryngology to which he has given so much attention and care, as to the submucous reaction of the nasal septum.

My observations are based upon the work I have seen in the clinics at New York, Philadelphia and Chicago, and at Lakeside Hospital, and upon my experience in 11 cases occurring in my own practise in which I have undertaken to do a complete submucous resection. I also wish to acknowledge my indebtedness to Dr Otto T. Freer, of Chicago, for the opportunity of seeing

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Read before the Ophthalmological and Oto-Laryngological Section of the Academy of Medicine of Cleveland. March 27, 1908 him perform several operations and of examining some of the cases on which he had performed a submucous resection some months before.

In two cases I was unfortunate enough to lacerate both sides of the mucoperichondrium at points opposite each other and a perforation persisted. In one of these, which was one of my earliest cases, there was a sharp angular deflection of the cartilage, the perichondrium was very adherent on both sides, and I was not skilful enough to separate it without perforating. One reason for this was that I tried to do an elevation with a blunt elevator instead of a dissection with a sharp instrument.

In the other case there was an extreme deviation of both the bony and cartilaginous septum and some years before a piece had been sawed from the convex side, so that over a small area we had only scar tissue on one side adherent to mucoperichondrium on the other side. To complicate matters, there was a persistent bleeding which adrenalin did not control. The patient was told before the operation was begun that there was great danger of perforation. This operation was undertaken because one nostril was practically occluded and the patient suffered from frequent asthmatic attacks. He has been free from these during six months since the operation and there has been a decided improvement in his general health, which he ascribes to his ability to breathe through his nose and to his freedom from asthma. While perforation exists in this case, the patient would not know it if he had not been told and, so far as I have ascertained, perforation does no harm physiologically, although of course an operation in which there is a perforation is not an entirely successful one anatomically.

It seems to me, from my limited experience, that submucous resection of the nasal septum should be undertaken in all cases in which there is sufficient deflection to interfere seriously with the breathing space in either nostril. This is done not only to furnish an adequate breathing space, but also to provide free drainage for the secretion from the nose and its accessory sinuses. In cases in which an extensive deflection has existed for some time, we are apt to find inflammation of some of the accessory sinuses of the nose, pharyngitis, laryngitis, bronchitis or otitis media.

As to the methods of operating, it seems to me that Freer in this country, and Killian in Germany, have done most to perfect the different steps and devise new instruments with which to perform them. I should also mention Ballenger in this country whose swivel knife is a very useful instrument in selected cases.

Personally I prefer, for most of the steps, Freer's method, in which he makes a long reversed "L" shaped incision following the line of the crests or sharp deviations if they exist, and in which he uses sharp instruments, contending that the operation is essentially a dissection and not an elevation. He removes the bony ridge which consists of the superior maxillary crest or crista incisiva, the vomer and the perpendicular plate of the ethmoid with his modification of the Gruenwald forceps, seldom using a chisel.

The "L" shaped incision through the mucoperichondrium is made with a small, very sharp, spear shaped knife, carrying the incision from high up in the nose downward and backward to the floor. I usually cut a slight distance into the cartilage itself in order to be sure that the mucoperichondrium has been completely incised, then the incision is carried forward along the floor nearly or quite to the anterior border of the cartilage.

In making the opening through the cartilage I formerly used a small mastoid curette to scrape through. This process is slow and apt to cause a considerable contusion of the mucous membrane of the opposite side. I now follow Freer's method and make a perpendicular incision through the cartilage with the same knife with which I incise the mucoperichondrium, going through at an angle of about 45 degrees to the plane of the cartilage.

After that portion of the cartilage which is involved in the deflection has been thoroughly denuded on both sides, if there is no special thickening or sharp angles, I remove it with the 3 mm. Ballenger swivel knife. I do not use the 6 mm. knife as I fear to do damage to the mucous membrane with the wide prongs. In cases not suitable for the use of this knife, I remove the cartilage piecemeal with the small knives devised by Freer for this purpose.

It is not safe to remove all of the cartilage under the bridge of the nose on account of the resulting deformity. Some operators also insist on preserving, if possible, at least one-quarter of an inch of the anterior portion of the cartilage; others state that there is no danger of deformity though the entire anterior portion is removed. After the necessary portion of the cartilage has been removed, that portion of the vomer and perpendicular plate of the ethmoid, if any, which is involved in the deflection and is above the level of the bony crest, is denuded and removed.

The next step is the freeing of the bony crest of its periostium on both sides. To accomplish this is, in my experience, the most difficult step of the whole operation. This bony crest is covered with a dense layer of periostium which is very adherent over its whole extent and which separates the bone from the cartilage. It is at first necessary to cut through the periostium along the top of the crest with a stout knife and then to dissect up the periostium on both sides down to the floor of the nose. For this purpose I think nothing is as satisfactory as the set of knives devised by Freer.

This portion of the operation is tedious and must be very carefully done and it seems to me that for the average operator to attempt to break loose this crest with the modified Asch forceps, as suggested by Ballenger, is apt to result in extensive laceration of tissue and in many cases in a permanent perforation; then, too, in many cases this crest is bent so far over on the floor of the nose that it would be very difficult to get hold of it with the modified Asch forceps.

After the ridge is thoroughly divested of periostium it is comparatively a very easy matter to remove it with the "V" shaped chisel as suggested by Ballenger or with one of the bone forceps of which the Freer-Gruenwald or Hajek's modifications of the Jansen-Middleton instruments are, it seems to me, the best examples. I believe that the use of the "V" shaped chisel is seldom necessary and that this step in the operation can nearly always be performed with the most safety and comfort to the patient by the use of the bone forceps.

This part of the operation should be thoroughly done because, if any of the bony deflection is left, the septum will not fall back in the median line and the naris of the convex side will still be partially obstructed. I wish to state, however, that I have not been able to remove all of this bony crest in all of my cases, owing to my limited experience.

In the presence of a large turbinate and a widely deviated crest it is sometimes difficult to pass the blade of the forceps over a large portion of the crest, and the operator has to proceed very slowly, taking small bits of the bone each time. Here the Jansen-Middleton forceps are superior on account of their narrower blades.

After the resection has been completed and the flaps applied, if it is seen that the septum falls readily in the median line, we are ready to complete the operation by applying some form of packing to prevent a secondary hemorrhage. I have not found it necessary to pack both nostrils even when both layers of the septum were perforated. I have tried the Bernay splint, gauze, and strips of lint as suggested by Freer. It is difficult to use just enough of the Bernay splint to obtain the right pressure when it expands after being introduced and moistened. It is also difficult to obtain an even, uniform packing with gauze; therefore I prefer the strips of sterile absorbent lint. I cut them from ¼ to ½ inch in width according to the size of the nostril, and impregnate them thoroughly with subnitrate of bismuth. Then, while the flaps are held in place with a long retractor, the first strip is passed along the floor of the nose a little farther than the resection has been carried. Strip after strip is introduced in this way until the naris is packed as high as the incision of the mucous membrane is made.

I have not found it necessary to use the rubber dam between the packing and the flaps as the slight amount of oozing, together with the bismuth, prevents any extensive adhesion. These strips are cut off just inside the vestibule of the naris, and a light pledget of cotton is introduced into the vestibule. The patient is told that there will be some oozing of bloody serum for the first 24 or 48 hours. I direct them to change the little pledget of cotton as often as it becomes saturated.

I have usually removed some of the upper layers of the packing at the end of 24 hours, and all of the packing in about 48 hours. Afterward, it is only necessary to free the naris from the mucus and crusts with an alkaline solution, and apply an oil to the surface, placing a small pledget of cotton in the vestibule of the naris to exclude dust.

There is nearly always a large amount of swelling of the inferior turbinate on the side of the convexity, which sometimes persists for several weeks and at first causes the patient to feel that he has no improvement in his breathing space. The swelling will finally disappear without any special attention. I have not seen any amount of suppuration in any of the cases upon which I have operated.

The small amount of reaction and the rapidity of healing is always a surprise to me. In one of my cases the patient performed active manual labor 24 hours after the operation, without any interference with healing, although I have made it a rule to keep the patient quiet for 48 hours.

If the flaps are carefully coapted and held in place with a long retractor while the packing is being applied, healing takes place with a very small amount of granulation tissue and therefore the patient is not troubled with resulting crusts in the nose, as is the case when extensive areas of mucous membrane are removed.

As to the contraindications for the operation, certainly one would not operate on an old person in whom senile changes had begun. Most of the operators say that it is not advisable to operate on a patient under 10 or 12 years of age, although Freer reports operating on children six or seven years of age with good results. Any ulceration in the nose or pharynx, either luetic or tuberculous, is a contraindication. In early pulmonary tuberculosis, in which the lesions are slight and the patient is not carrying a high temperature, I believe the operation would be warranted if the interference with the nasal respiration is extensive. Advanced pulmonary tuberculosis or early active lues are contraindications. Cases of lues, in which there are no open lesions and in which the patient has been under an appropriate treatment for a year or more, may be safely operated upon. I operated upon a case in which the patient had been under treatment for a year and a half, with perfectly satisfactory results. Any acute inflammatory process in the nose or its accessory sinuses would be a contraindication. Ozena is not so considered and some operators advise the operation as an aid in curing the condition.

It has taken me from two to three hours to complete the operation and apply the packing. I have had no difficulty in producing anesthesia, usually applying the cocain crystals on a cotton-wrapped probe moistened in adrenalin solution. For instance, one of my patients told a friend that he had often been hurt more by someone shaking hands with him than he was during the entire operation.

I have found it difficult to control the hemorrhage in several cases, although the different preparations of the active principle of the suprarenal gland were tried. I believe this is because the nasal tissue in these cases is the seat of a chronic congestion.

In each case I have operated upon there has been a decided improvement in the condition of the nasal passages and I have felt that the patient has received more benefit than from any other operation for the correction of septal deflections with which I am familiar.

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The Treatment of Ozena

By W. H. TUCKERMAN, M. D.

In making a review of the textbooks of the last 50 to 60 years, it will be found that the term ozena was first applied to any foul discharge from the nasal cavities irrespective of the cause and it is still used by some authors in that sense, but today the majority have limited the use of the word to a fairly definite class of cases. The term is still open to the objection that it represents a symptom and not a disease but its clinical convenience justifies its use.

The most prominent symptom of the disease is the characteristic, persistent, mawkish odor. This odor is often so penetrating that it will be noticed as soon as the patient enters the room and in five or 10 minutes the air will be unbearably polluted. The patient's sense of smell is gone and he comes to the physician either to be relieved of the crusts or because friends and relatives have complained of the stench. On examination the nares and nasopharynx are found filled with dry, thick, yellow or greenish-yellow, mucopurulent crusts. These often make a complete cast of the cavity. The nasal cavities are roomy and the turbinates and their mucous membrane show an atrophy varying from a mild to an extreme degree and progressive in character. In advanced cases the turbinates appear as but slight ridges on the exterior wall of the enlarged cavities. There are no ulcers of the mucous membrane and it appears pale and thin except where the removal of crusts has left a slight abraded area. The abrasions bleed but little. The disease commences about the age of puberty and continues to about the age of 40, when it becomes stationary.

The etiology of the disease is much mooted and I shall not discuss it other than to point out several opinions which the clinical observations seem to refute. (1) It is held that the atrophic condition is secondary to hypertrophy and that the atrophy is due to the contraction of the new-formed fibrous tissue interfering with the circulation. (2) That there is no essential difference between simple atrophic rhinitis and ozena. (3) That an infection of one of the accessory sinuses is the cause of the majority of cases.

None of the patients that I have examined have at any time shown a true hypertrophy, neither could I elicit a clear-cut history of the previous existence of such a condition. The two youngest

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Read before the Ophthalmological and Oto-Laryngological Section of the Academy of Medicine of Cleveland, March 27, 1908 patients, aged 12 and 13 years, already showed abnormal roominess of the nasal cavities in spite of the fact that the turbinates were at that time engorged and gave an appearance of venous congestion.

As regards the second contention, if true, it would at least seem probable that we should be able to report cases of simple atrophy developing a fetid odor and cases of ozena returning to simple atrophy in spite of the persistence of crusts. In my limited number of cases I have seen no such instance. In all cases of ozena treated, so long as any crusts remained, they retained the characteristic odor, while, on the other hand, those of simple atrophy remained odorless no matter how heavy the crusts. I have in mind one case in particular in which the crusts formed almost complete casts of the nares and nasopharynx and still remained free from odor.

As regards the third contention, the fact that we have so many cases of infection of the sinuses, extending over long periods of years without ozena, would seem to exclude them as an etiologic factor, although it may be true that the membranes covering these sinuses are subject to the same pathologic changes as occur in the nose.

The treatment of this trouble is clearly defined as absolute cleanliness of the nasal cavities. It is essential to impress upon the patient the paramount necessity of the routine cleansing of the nose at home and the fact that the condition, although tedious to treat, offers good hopes for a symptomatic cure. The patient should be instructed to spray out the nose with a warm alkaline solution until it is free of crusts and mucus and to follow this with an oily spray; this should be done at least twice a day and better three times. He should report for treatment one, two or three times a week as the severity of the case demands. At these treatments the nose should be thoroughly cleaned with small pledgets of cotton on an applicator, removing all crusts the patient has been unable to dislodge. Then the mucous membrane is treated with a mild stimulating application. It makes little difference what the character of the stimulant is, as is shown by the vast number of drugs recommended and the use of mechanical massage and mild electric currents. Silver nitrate 3 to 5%, zinc sulphate 1 to 4 grains to the ounce, ichthyol 25 to 50%, iodin and potassium iodid in glycerin, carbon oil 4 to 6 drops and argyrol 10%, are commonly used. Some advise the nasal douche instead of a spray for cleansing the nose, claiming for it more efficiency, but the fact that the Eustachian tube is often widely patent in these cases has made me avoid its use. As many of the patients are poor I have them drop the oily solution into the nose instead of using an atomizer and this appears fully as efficient. When doing this they are instructed to lie on the back until they taste the medicine in the throat.

Under the above treatment, faithfully carried out for three to six months, the office treatment can be reduced to an occasional visit or even omitted, provided the patient has learned to give the toilet of the nose as much care as most people do to the teeth. The great trouble with the control of these patients is the fact that they are generally of the laboring classes, and also that their sense of smell is lacking. This easily allows them to lapse again into a condition in which either the crusts bother them or the odor again offends their neighbors.

The prognosis is poor. The course of the disease is chronic, tending to spontaneous cure at about the age of 40 when the progressive atrophy ceases and the odor becomes negligible, leaving only the roomy nasal cavities with the attendant dry pharyngitis and laryngitis. Treatment does not alter the course of the disease but distinctly influences the rapidity of the atrophy. It also keeps the patient in a condition of comparative personal comfort, allows him to mix socially without being a curse to his friends, and when the trouble finally ceases the resultant atrophy is much less marked.

Squamous-Celled Carcinoma of the Cervix Uteri—With Report of Cases

By ALBERT J. BOWER, M. D.,
Late Resident Gynecologist to the Lakeside Hospital, Cleveland, Ohio

Two cases of squamous-celled carcinoma of the cervix uteri, in which the growth had arisen from and remained apparently limited to the posterior portion of the cervix, have recently been in the gynecological service of the Lakeside Hospital, and furnish the data for the following report:

These cases call to mind the fact, as stated by Sampson, that "it is difficult to understand why the growth in one case may extend in a certain direction, while in another case the direction may be different. In one specimen the growth may be confined to the anterior portion of the cervix, the bladder soon becoming involved; on the other hand, in another case the posterior portion of the cervix may be involved and the rectum may soon become

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Read before the Lakeside Hospital Medical Society, March 27, 1907 invaded. There seem to be as many types of the direction in which the growth may extend as there are possibilities. We are unable to determine why the direction of the invasion of the growth may vary in different cases."

In the two cases here reported the extension of the growth seems to have been far more rapid in an outward direction than had its invasion of the underlying tissues. In both cases a radical operation was performed by Dr Hunter Robb.

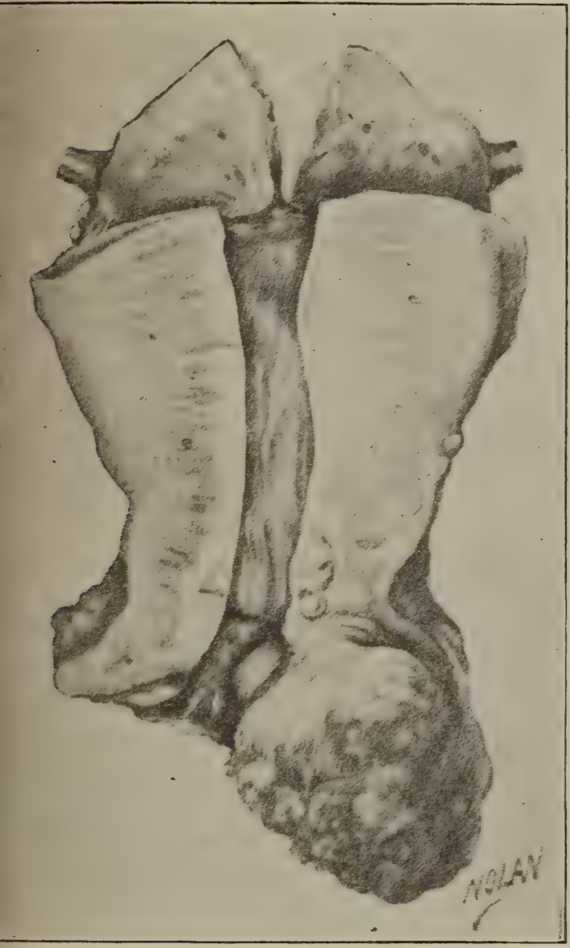

Fig. I.

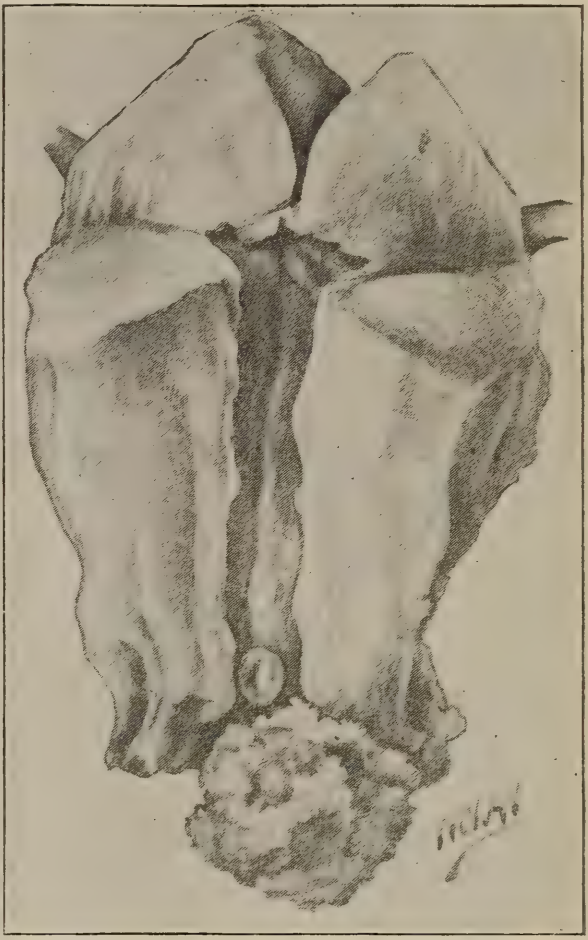

Fig. II.

Case 1. Mrs. E. P. (referred by Dr Wm. E. Lower), aged 47, admitted to the Lakeside Hospital January 28, 1907, married 13 year, V para, oldest 10 years, youngest three years, first labor instrumental. She had one miscarriage seven years ago, at seven months. Menses have been regular until one year ago and not painful. Now menstruates about every three weeks, but the flow is not profuse. For the past two months she has had a constant bloody discharge from the vagina. For the past two weeks this has been profuse. She also complains of painful and frequent micturition and a feeling as if the womb was coming down. The patient's general condition is fairly good. The family and personal history have no bearing on her present condition.

By bimanual examination the following condition could be made out: The vaginal outlet is much relaxed. In the vagina a friable mass with an ulcerated external surface can be made out. This mass springs from the posterior lip of the cervix and fills up the vagina. The cervical canal is somewhat irregular in outline. The uterus is back in the pelvis and is enlarged and movable. The lateral structures are not adherent, nor is there any appreciable thickening in the bases of the broad ligaments. Diagnosis: carcinoma cervicis uteri. Vaginal hysterectomy was performed February 1, 1907. The convalescence was uninterrupted and the patient was discharged from the hospital March 4, 1907.

The macroscopic and microscopic examination shows that the growth is a squamous-celled carcinoma of the cervix, confined entirely to the posterior lip, growing downward, and pushing the mucous membrane ahead of it, but not spreading laterally or upwards. (Fig. I.)

Sections were also made through the posterior lip just below the internal os, and through the anterior lip, and through the posterior uterine wall above the internal os, and through the fundus. There was no involvement of any of these areas, by the malignant growth.

CASE 2. Mrs. E. L. (referred by Dr Kirtland, of Berea, Ohio), admitted to Lakeside Hospital, March 2, 1907, aged 41, married 23 years, IV para, oldest 22, youngest four years of age, no miscarriages, menses regular, profuse but not painful. Last period three weeks ago. She had a bloody-tinged leucorrheal discharge during the past four years. She has had a considerable amount of backache, and is very nervous. She also had been troubled with frequent micturition. The family and personal history have no special bearing upon her present condition.

On the bimanual examination the following notes were recorded: The vaginal outlet is considerably relaxed; the upper portion of the vagina is occupied by a friable, cauliflower mass, which is attached to the posterior lip of the cervix. (Fig. II.) This mass bleeds upon the slightest manipulation. The uterus is enlarged and sagging in the pelvis and is freely movable. Diagnosis: Cancer involving the posterior lip of the cervix. Operation: Vaginal hysterectomy was performed March 4, 1907. The patient made an uninterrupted convalescence.

The macroscopic and microscopic diagnosis is similar to that made in the first case.

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EDITORIAL

A Spirochæta in Yaws or Frambœsia

Since the discovery of the spirochæta of syphilis by Schaudinn, there has been much active work in the same line and one of the most interesting developments has been in the tropical disease known as Yaws or Frambœsia, or among the French Colonies, as Pian. This is a disease which has primary and secondary lesions in a manner similar to syphilis, the skin manifestations being clinically quite difficult to distinguish. In fact one of the types of secondary skin lesion in syphilis is known among the Germans as the "Frambœsic" type. The disease affects black and white, and is also pathogenic for monkeys, in much the same degree relative to their place in the scale as is true of syphilis. After the discovery of the spirochæta in syphilis the same methods were applied to Yaws, with the most interesting result that the etiologic factor was found to be a spirochæta so similar to that of syphilis that with many of the stains, and notably with the silver method, the two were indistinguishable. A number of articles on the subject have appeared, for the most part by German writers, but the most recent is by Levaditi and Nattan-Larrier, in the last issue of the *Pasteur Annals*. Levaditi is the originator of the silver method for staining the spirochæta and his name carries much weight in any matter relating to such organisms. The authors had the opportunity of observing a patient practically through the whole course of the disease and were able to make all necessary animal inoculations. The organism can be demonstrated in all cases in the primary lesion, less often in the secondaries and rarely in the internal organs. It is known as Spirochæta pertenuis, and resembles the pallida so closely that none but an expert may hope to differentiate the two. The lesions may, however, be fairly readily distinguished from those of syphilis on account of the comparatively acute type, with thicker crusts, and formation of collections of pus rather than granulation tissue. It is of obvious interest to discover whether there is actually any relation between these two very similar organisms and whether Yaws is a form of syphilis or not. In the attempt to solve this, inoculations similar to those of syphilis have been made by a number of observers. All agree that the monkeys are susceptible in about the same general relation to their height in the animal scale, as has been found true with syphilis inoculations, though in a somewhat lesser degree. Only the orang-outangs show the secondary lesions. The German observers claim that there is no cross immunity, or in other words that an attack of syphilis does not immunize against Yaws and vice versa. The present observers claim on the other hand that while it is true that an attack of Yaws does not immunize against syphilis, an attack of syphilis does immunize against Yaws. They consider the results of the other observers to be due to following the manifestation of the first disease too closely by the inoculation of the second to allow of the development of the immunity, or so long after the disappearance of the first disease that the immunity, which is more transient in animals than in man, has run out. In other words they lean to the opinion that Yaws is an attenuated variety of syphilis, just as the ordinary tertian malaria may be said to be an attenuated variety of the active estivo-autumnal. They adduce in addition that experimental inoculations in the rabbit's eye, which are successful in syphilis, are negative in Yaws. Confirmation of this will of course be required, and there is no doubt but that replies will soon be found in the literature. In the meanwhile it is most interesting that a disease which is clinically so similar to syphilis that the two are often confused, should be found to be due to an organism so closely allied to the syphilis organism as is the Spirochæta pertenuis.

Religious Therapeutics

The psychic treatment of disease has, of recent years, assumed a vast degree of importance. Especially is this so, since it has been exploited by the Christian Scientists with very favorable results in many instances. The older churches, seeing this, and realizing that they were not devoting as much attention to it as they might, have begun to make use of their opportunities to better advantage.

Ministers in Boston took up the work actively a little over a year ago, and since then Bishop Fallows, of Chicago, has done the same. In the *World of Today,* for March, he discusses the subject in an article that proves interesting reading to the medical man. He points out that in olden times the functions of the priest and physician were often merged in the same individual, but by degrees, as medicine became more scientific, the care of the sick has been relegated to the physician, until today the influence of the regular churches in the direct application of therapeutic measures is almost nil. Not that the churches fail to aid the sick and by pastoral visits to comfort the afflicted, but that they do not cooperate with the physician as actively as they might. On the other hand the physician has depended too much upon the material means at his disposal and has allowed his priestly function to lapse and does not avail himself as much as he might of psychic treatment.

The present movement is intended to revive "religious therapeutics" by aiding the physician in the treatment of disease, especially of such functional disorders as may be benefited by mental suggestion. With this the physician must be heartily in accord. No objection can be made to it as is the case with Christian Science, because the regular churches admit the limitations of this method of treatment, and instead of antagonizing the physician they insist upon the necessity of cooperation with him. There are many patients who would be greatly helped if they could but give up worrying and thinking about their own physical condition, their troubles, aches and pains, which are but aggravated by this introspection. The physician alone is not always able to effect this. An appeal has to be made through other channels and the patient's religious faith will often prove the most effectual in tranquilizing and quieting the mind.

The results so far obtained have been very encouraging, as one might expect, and a much wider application of this method of therapeutics may be expected in the future.

Association of American Pathologists and Bacteriologists

The annual meeting of this association was held in Ann Arbor last week, under the auspices of the University of Michigan. The papers covered a large scope and as usual indicated the trend of the laboratory work at the present time. The question in the general line of immunity which is now occupying the time of a large number of men concerns the phenomena following on an injection of horse or other serum, followed after a certain interval by a second injection of a very small amount of the same serum. The usual result is the death of the animal and the name of hypersensitization or anaphylaxis has been given to the condition. In the main there are two sides to the question, the Boston observers holding that the phenomenon is dependent on changes which have taken place in the cell itself as a result of the first injection and which have given the cell the capacity to take up more of the critical substance at the second attempt with serious results to itself. In experimental animals they show lesions in the central nervous system in support of their point. The other side is sustained by the Washington men, headed by Rosenau, to whom the first activity on the subject must be ascribed, and it is considered by this group of men that the principle is more directly connected with the theory of Ehrlich, and that the cell changes are not of a type to be differentiated under the microscope by our present methods.

The rest of the program covered various problems in pathology and bacteriology, valuable contributions towards the better understanding of syphilis and tumors being notable in the list.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Pneumonia: M. Howard Fussell, in the *Therapeutic Gazette* for March, summarizes the treatment of pneumonia. He believes the mortality depends upon the age, the social condition, the habits of the patient and the degree of pneumococcemia. The degree of the latter, it would appear, has much more to do with the percentage of mortality than has the amount of lung involved. So far there has not been discovered a specific treatment for pneumonia. The one which promises most is treatment with antipneumococcic serum. This has failed so far either because of its low potentiality or because there are several strains of pneumococci not to be distinguished. With quinin in massive doses he has had no greater success than with the symptomatic treatment. Veratrum viride too, like other specifics, has been found wanting. As the basis of treatment four requisites stand out as all-important and they are at the disposal of all, rich and poor alike:—rest, fresh air, a nurse and watchfulness on the part of the physician. Rest must be absolute from the beginning of the infection until convalescence is well established. Fresh air stimulates the patient, gives him oxygen as pure as the air of the locality allows and inhibits the growth of the pneumococcus. Watchfulness on the part of the physician for changes in the patient are of great importance. Two visits in the 24 hours should always be made unless a competent nurse is present who can report by telephone. There is ample time in 24 hours for a weakened heart to become so feeble that it fails before any remedy administered can be of effect. With these four valuable aids secured, each case must be treated upon its own merits. For pain use cold or hot applications, dry cups to the chest wall, or, if very severe, morphin hypodermically. For the cough codein is to be preferred. He believes fresh air in the room relieves the cough. Restlessness and delirium are best controlled by 30 grain doses of bromid of ammonium, but one-eighth grain hypodermics of morphin may be required. Digitalis, strychnin and whiskey should not be given in a routine manner simply because the patient has pneumonia: use them when needed and use them in good and sufficient doses. He thinks the value of nitroglycerin in pneumonia is in the rare cases in which bloodpressure is high, then it may be given to dilate the peripheral vessels. He believes too that when large doses of digitalis are given, it is more efficacious if combined with nitroglycerin. He cautions against the use of the coal-tar antipyretics, which, while lowering the temperature, do so at the expense of a depression of the heart. High enemata of salt solution are most efficacious as well as hypodermoclysis which in severe cases he has used with excellent results. He avoids poultices and the various pastes on the market as they are dirty, impede the breathing and interfere with the examination of the patient. He advises a masterly inactivity as to indiscriminate drugging.

Lactation: In the March number of the *Medical Review of Reviews* (*Zeitschrift f. Exper. Pathol. u. Therap.*) Bucura considers the subject of the transference of medicinal substances, taken by the mother, into her milk, and the possible interference with the welfare of the child. Only certain medicaments such as potassium iodid, sodium salicylate, ether, antipyrin or mercury as rectal suppositories, have been positively shown to pass into the milk. Furthermore, positive results in regard to atropin, morphin, arsenic, lead, zinc, copper and bismuth are based upon animal experimentation. The author administered 40 different drugs to nursing mothers, whose milk was then tested as to the presence of the respective medicinal agents. It was found that, contrary to the general assumption, mineral salts, etc., do not pass into the milk. A peculiar behavior is shown by mercury; calomel administered internally does pass into the milk, whereas no mercury could be demonstrated in the milk after mercurial inunctions and injections. Substances which positively pass into the milk, besides the above mentioned drugs, are aspirin, arsenic, and the bromids, probably also urotropin. It remains to be seen whether or not the administration of larger doses of certain other agents which yielded negative findings will result in their transference into the milk.

Eczema: In the *New York Medical Journal* for March 21, James M. Winfield asserts that the treatment of eczema in infants and young children must be divided into two parts; first, the care of the child, and second, the treatment of the disease proper. The first division is the more important, for if the child is properly and hygienically cared for, the treatment and cure of the cutaneous disease proper is often an easy matter. As regards constitutional treatment, most eczematous children are constipated; there can be no definite prescription that will suit all cases but no laxative should be given in large enough doses or for a sufficient length of time to cause purgation: the dose should be just large enough to relieve the constipation and regulate the bowels, except in those children who are heavy feeders and poor eliminators, then an initial dose of either calomel or castor oil can be prescribed to rapidly relieve and clean out the intestinal tract. If the child is still at the breast some of its constitutional treatment can be given through the mother. The most troublesome symptom of eczema is pruritus; this can usually be relieved by external applications, if not, small doses of bromide or chloral can be given, but when these drugs are used their action should be closely watched, for the bromids are capable of causing a serious looking dermatitis, and when the skin is already diseased this drug should be most judiciously employed. The routine administration of arsenic in infantile eczema should be most strongly condemned, for it does little or no good to the cutaneous disease and is apt to disturb the digestive processes: this drug is indicated only when its tonic effect is desired. The important rule regarding internal medication is to give as little medicine as possible: for if the child is properly bathed, clothed, and fed, its constipation relieved and the proper external application is used, little else will be required to effect a cure.

Analgesics: Le Grand Kerr, in the *Medical Record* for March 21, summarizes the use of the analgesics in pediatric practice. (1) They are all more or less transient in their effect, except in the case of a very few of the weakest ones. (2) They are all more or less objectionable; (a) because of the liability to the formation of a drug habit; (b) because of the irreparable damage done to a developing nervous system when their use is prolonged; (c) because of the dangers of overdosage by accumulation; (d) because of the irritant effect which most of them possess. There are some well-defined rules in their administration, as follows: (1) They must be given only when absolutely necessary and after a careful consideration of the relief which might be obtained by their external and local rather than their internal administration. (2) They should not be given at a time or in such a manner as to obscure the diagnosis. (3) The cause of the pain must be removed whenever possible before the internal administration of an analgesic. (4) The dose should be very small at first and for three reasons: (a) The child might be susceptible to the drug used; (b) Relief from pain once established in a child tends to continue. (4) The opportunity is offered for an increase in the dose later on if the demand arise. (5) Any one agent must not be used continuously, but a change must be made from time to time to avoid tolerance and habit. (6) The dose should be small and frequently repeated instead of an initial large dose.

Peritonitis: In *Merck's Archives* for March, J. P. Runyon considers the treatment of peritonitis and summarizes as follows: (a) The main principle in the treatment of acute peritonitis is rest; (b) The best method of securing absolute rest to the bowel is to withhold everything by mouth for 24 to 72 hours; (c) After acute symptoms have subsided, small quantities of liquids, first water, then nourishment in small quantities, should be given; (d) At the first sign of peritonitis, rectal alimentation should be administered at intervals of six hours until such time as it may be deemed safe to resume stomach feeding; (e) Ice bags should be applied until all tympanites disappears; (f) So soon as it is deemed safe, the cause should be removed by operation in order to prevent a recurrence; (g) Do not give purgatives as they defeat the main principle of treatment.

Vasodilators: In the *Journal A. M. A.* for February 29, Henry Wireman Cook calls attention to the choice of a vasodilator and the indications for vasodilation. He prefers sodium nitrite rather than nitroglycerin or amyl nitrite, comparative observations during the past four years having invariably proved favorable to the sodium compound. He has made a limited number of observations with erythrol tetranitrite, but could demonstrate no advantage over the sodium salt. It is quite expensive, a dozen tablets costing one dollar. In no instance have accurate clinical methods been of greater value than in defining and broadening the use of vasodilators. Medical means of dilating the arterioles and so lowering blood-pressure have an important place in general therapy, for a high tension pulse accompanies many chronic diseases, induces severe symptoms and may precipitate a fatal termination. There are two particulars concerning which we should make inquiries in selecting a vasodilator. First, its effect on arterial tension; second, its general or systemic effects. The action of sodium nitrite always tends to lower the existing tension. We would expect, too, to have a tension of 180 mm. Hg. lowered a greater number of millimeters by the same dose, than a tension of 100 mm. Hg. Likewise the lowered tension is often maintained over a longer period in high tension cases than in low. The action of sodium nitrite usually begins in from three to five minutes when administered by mouth and in about two minutes when given hypodermically. It is maintained for one to two and one-half hours, the return to previous level being accomplished in from two to three and one-half hours or more. Nitroglycerin acts quickly and rather uncertainly and the effect is of short duration. He has not noted the action of a therapeutic dose of nitroglycerin to last longer than one hour. A great recommendation for the use of sodium nitrite is the almost entire absence of general effects when it is given in proper doses. The throbbing, dizziness, flushing, etc., which are often distressing with amyl nitrite and nitroglycerin are slight or absent with sodium nitrite. He usually gives the sodium nitrite in triturates of one-half or one grain each by mouth or hypodermically. One-half grain of sodium nitrite is a safe initial dose in an untried case, with a three hour interval between the doses. He concludes that (1) Sodium nitrite is the best vasodilator; it has the most enduring effects; it is most stable and dependable and it gives rise to fewest unpleasant symptoms. (2) Vasodilation may be indicated with low or normal tension; that is, in all cases of uncontrollable hemorrhage, either during operative manipulation; from typhoid ulceration; gastric ulcer; pulmonary phthisis; other internal hemorrhage, uncontrollable by surgical methods; aneurism; thrombus, etc. (3) High tension is abnormal and is either the accompaniment of organic disease or else presages its onset. In either case it demands treatment, first by general hygienic measures, second, when necessary, by venesection or vasodilation with drugs.

Dosage: In the *Critic and Guide* for March, Wm. J. Robinson comments further on the necessity for adapting dosage to the individual case rather than following set textbook statements as to doses. He cites a case of asthenic pneumonia in which the patient's heart was getting weaker and weaker, the pulse 120-140 per minute, and at times hardly perceptible. Fluid extract of digitalis in minim doses every three hours had no apparent effect, the patient steadily sinking. Under the advice of A. Jacobi who was called in consultation the dose of fluid extract was increased to 10 minims. When told the maximum dose was two minims Jacobi said "Never mind the maximum dose, and besides what have you to lose? the patient is sinking anyway." The doctor administered 10 minims with some trepidation, but the first dose showed improvement and after a few doses the change was remarkable and the patient made a rapid and uninterrupted recovery. He states concerning the charge that medicine is sometimes denounced as a humbug and the merest guesswork, that if medicine was a real science the same drugs would always be prescribed in the same condition. It is silly and puerile to claim, as is done in some quarters, that medicine is at present an exact science. No it is not. We are in the dark as to a good many points and we have much—very, very much—to learn. But there is one thing he wishes, the quacks, the quasi-reformers, and all other detractors of medicine to remember: *There is a vast difference between not knowing everything and knowing nothing.*

Indicanuria: Geo. M. Mackee, in the *New York Medical Journal* for March 14, advises in the treatment of indicanuria to restrict animal food to once a day and in some instances to abstain for a time at least from all nitrogenous food. Hygiene in many cases is of as much importance as diet. As to medicine, the digestive mixtures may, for obvious reasons, be of service when indicated. The so-called intestinal antiseptics have been and still are being employed to control intestinal putrefaction. Although such drugs as salol, dermatol, etc., may reduce the urinary indican, it is hardly advisable to use such preparations for protracted periods. In the first place, we do not know what deleterious effect such drugs may have when taken indefinitely. Again it is possible that such measures influence the protective members of the intestinal flora, as well as the harmful invaders. In any event, it has been found that patients fail to do as well as expected when treated in this manner. As regards constipation Maberly finds that sodium sulphate in small doses acts not only as an aperient, but also as an intestinal antiseptic through the liberation of oxygen during the process of chemical decomposition. Lavage of the colon and stomach in both adults and children has been of benefit in disturbances of these organs when associated with intestinal putrefaction and autointoxication. Concerning sour milk he has found that although lactic acid will control indicanuria to some extent, the indican will return to its original degree very soon after the acid is discontinued. Buttermilk, and milk soured by means of native bacteria, will in many instances completely control an indicanuria, and in some of his patients, who have taken such for a considerable period, there has been an apparently complete cure, so making a continuance of the milk unnecessary. Considerable caution must be exercised in selecting an artificially soured milk, and if one desires to do so a good grade of whole milk may be soured at home by infecting it with a culture of suitable lactic acid organisms, and the product consumed daily.

Academy of Medicine of Cleveland

The fifty-sixth regular meeting was held March 20, 1908, at the Cleveland Medical Library, H. W. Rogers in the chair. The program was as follows:

1. The History of Medical Education in America (Present Conditions and a Comparison between American Medical Education and that of Great Britain and Germany; Standards That We Should Aim to Secure in this Country; The Rapid Improvement That is Being Made and the Steps Necessary to Secure High American Standards). Arthur Dean Bevan, Chicago, Ill. (To appear in full in the *Journal A. M. A.*)

In discussing the paper Dr J. J. R. Macleod said that in Great Britain all the medical schools are supervised by the General Medical Council which, besides controlling the entrance examinations and regulating the nature of the medical course, were also empowered to grant licenses to practise medicine to those who had satisfactorily passed the diploma examinations. Such diploma examinations are not conducted by the Medical Council themselves but by examining bodies and by the Universities. The largest examining body is the Conjoint Board of the Royal College of Physicians and Surgeons, and the second largest, the Society of Apothecaries. The University examinations are distinctly harder than those of the above examining bodies. Still higher qualifications were granted by the Royal College of Physicians and Surgeons to those who intended specializing in medicine or surgery. An excellent feature of the British system is the standardization of medical education.

He was greatly pleased to see the manner in which the propaganda for improved medical education in this country was advancing as shown by the speaker's statistics. Personally he was in favor of having the State examination divided so that the primary subjects such as anatomy, physiology, chemistry, etc., might be taken at one time and the clinical subjects later. His reason for this was that the primary work is most valuable in training the student's mind in the habit of thinking out his problems for himself. When such training in the institutes of medicine is thorough the student in his later medical practise is much more capable as a diagnostician and therapist. Examinations upon this primary work might therefore be completed first and be more thorough than is at present the case, leaving the student's whole energies to an examination upon the final subjects at a later date.

R. E. Skeel said that in Ohio the State law provided practically for all the requirements suggested in the paper with the exception of a year's preliminary college work and a year's hospital work. As a matter of fact practically all the students in Northern Ohio take a year's hospital training as the hospital positions are numerous and the number of graduates relatively small. He had been impressed by the growing distrust on the part of the public at the efforts of physicians to secure the passage of special medical legislation. Any one who had approached legislators with this end in view must have appreciated that they were suspicious. He thought we, as a profession, should devote a good deal of the energy expended upon the raising of the standards of medical education to the elevation of the standard of medical ethics, not the code of ethics as ordinarily understood but the ethics of simple honesty. This increased attention is as desirable as the elevation of standards of medical education *per se*. It is a question whether the growing commercialism in medicine is not leading the public to distrust us when it understands that we are making more of a trade than a profession of our work. When a man with no special preparation can establish himself as an oculist, aurist, gynecologist, surgeon, or what not, and rapidly develop a large practise by paying a commission for his cases, the ethical and moral tone of the profession must be so low that to some extent the distrust by the laity is justified. Until our tendency reaches up to the plane of a higher ethical level it is questionable whether agitation for higher standards of medical education *per se* had better not be omitted in favor of some effort devoted to ethical and professional teaching. Before the medical profession can secure recognition by legislators it must purge itself of some of the just accusations made against it and which are not based on poor medical teaching as such.

2. Obstruction of the Vena Cava. Charles G. Stockton, Buffalo, N. Y. The paper was divided into four parts:

First: The report of a case of obstruction of the vena cava complicating Graves' disease, together with an account of the autopsy and a diagram. Osler's contribution to the subject was reviewed and his cases collected from the literature were noticed. Also Welch's study of the thrombosis relating to heart disease was discussed in which it was pointed out that in cardiac disease thrombosis was rare except when it occurred in the big veins near the heart. In the writer's case the heart showed but little anatomic change, but there was much disturbance of the heart during life. Allusion was made to the pressure sometimes exercised by the dilated left auricle upon the vena cava thus inducing thrombosis.

Second: The report of a case of obstruction of the inferior vena cava, probably from phlebitis 12 years before. The case showed a large liver and spleen; also, for three months, persistent ascites, requiring frequent tapping.

Third: Twenty-one cases collected from the literature were abstracted, from which inferences were drawn.

Fourth: Remarks were made upon the extraordinary development of the superficial abdominal and thoracic veins in cases of obstruction to the vena cava, except when it occurred as a fetal peculiarity. The question of the reverse current of blood in the veins was considered; also the enlargement of superficial veins resulting from other causes, for instance the venous dilatation following portal obstruction was compared with that known to depend upon obstruction of the vena cava.

Several plates, enlarged photographs and sketches from actual cases were used to illustrate the paper.

THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The thirty-fourth regular meeting was held Friday, March 27, 1908, at the Cleveland Medical Library, A. R. Baker in the chair.

W. E. Lower presented a man with a lacerated wound on the left side of the neck at the level of the larynx. Injury was received by a fall from a car. The wound was dressed in the ordinary manner and after healing, patient developed an annoying cough; in addition there was a partial ptosis of the left upper lid. Thinking that undoubtedly a portion of the recurrent laryngeal nerve was caught in the wound, he advised and performed a removal of the original scar, finding in its upper portion a small quantity of rust. Following the operation there was complete cessation of the cough, but ptosis has persisted. In the discussion A. H. Marvin thought that the irritation might be from the superior laryngeal. C. F. Hoover thought that the condition in the lid was caused by the irritation of the vagus and cervical sympathetic, pointing out that there was a myosis on the left side and also a hyperidrosis.

D. B. Smith presented a specimen of an eye. The patient had had typhoid fever at 14. Later she developed some trouble with her eyes, and it was found that she had "iris bombe"; for this latter condition an iridectomy was performed three years ago. Of late she had had recurrent attacks of severe inflammation requiring enucleation of the eye. The eye showed on its exterior surface two cysts, one along the line of the cicatrix, the other in the lower portion of the sclera. There was also to be felt a bony growth in the eye ball.

E. Lauder reported a case of what was originally thought to be a dacryocystitis which proved to be an ethmoiditis of a specific nature. The ethmoiditis was cured and later there developed a divergent strabismus. The vision of each eye was 20/20 although the vision of the left eye was slightly less than that of the right. The question which he brought up was, what influence had the ethmoiditis upon the later developing muscular condition? The program was as follows:

1. "Some Observations Concerning the Submucous Resection of the Nasal Septum," by I. J. Kerr. Appearing in full on page 274. Discussion of the paper by A. H. Marvin, J. E. Cogan, W. H. Tuckerman and S. H. Large.

2. "Treatment of Ozena," by W. H. Tuckerman. Appearing in full on page 280. S. H. Large in the discussion stated that he had injected paraffin in a number of his cases and had also used oil of bergamot and coal-oil. A. H. Marvin said that he also used the coal-oil spray and in addition gave large doses of potassium iodid and used for an application glycerin and tincture of iodin. The various speakers of the evening considered that recently they had treated a smaller number of cases of this kind than formerly.

3. "Presentation of a Case of Paralysis of the Recurrent Laryngeal Nerve, Cured," by A. H. Marvin. The patient had been shown at the November meeting; the young lady had had at that time a paralysis of the right recurrent laryngeal due to an enlarged thyroid. The patient was subsequently operated upon by G. W. Crile, and the thyroid of that side removed. The patient was presented to show that the removal of the thyroid had entirely cleared up the paralysis of the recurrent laryngeal, the patient having perfect phonation. There was a slight exophthalmos prior to operation which had completely disappeared.

CLINICAL AND PATHOLOGICAL SECTION

The fiftieth regular meeting was held Friday, April 3, 1908, at the Cleveland Medical Library, W. G. Stern in the chair.

W. B. Laffer presented a man who had undergone a decompressive operation for a cerebral tumor. He had symptoms for 11 months, vomiting and severe headache. For two weeks previous to the operation he had been blind and for one week completely comatose. There were no localizing symptoms although the choked disc was more pronounced on the right side. A large bone flap under the left temporal muscle was removed by A. F. House. The brain immediately bulged out and a glioma could be seen in the field of operation, no effort, however, was made to remove it. The relief was immediate. Before the operation he was completely comatose and could not say a word and yet, before he was removed from the table he complained of discomfort from the sandbag under his neck and by the time he reached his bed he was giving instructions for notifying his friends by telephone. The speaker also exhibited a photograph of another patient with hernia cerebri, the result of a decompressive operation for cerebral tumor. The result had been very favorable with perfect eyesight and comfort for a year following the operation.

The program was as follows: Art Applied to Medicine and Surgery, by Howard A. Kelly, M. D., Professor of Gynecological Surgery, Johns Hopkins University. The speaker said that he had been keenly interested in this subject and during the lecture he reviewed the curious fluctuations in medical illustrations and the remarkable progress made during the past 20 years. Thirty-four fine enlargements from valuable old medical works in the speaker's own library greatly added to the understanding of the address. They began with woodcuts from the *Ars Moriendi* published in 1430 and the *Fasiculus Medicinae* of John Ketham in 1491 on down through the works of Berengarius de Carpi, Marianus Sanctus, Rhodius, Dürer. Mundinus, Vesalius, Estienne, Rüffen, Valverda, Eustachius, Spigellius, Willis, Völter, Heist, Bidloo, Ruysch, Deventer, Haller, Cheselden, Scarpa, Camper, Mascagni and Bell, and, to sound a note of encouragement to those who despaired of enriching their own books with even photographic illustrations, he referred to the fine ones made by Ruysch, Camper and Bell, themselves, and, more recently, those by John Syng Dorsey in his *Elements of Surgery*, Henle, in his *Knochenlehre des Menschen*, Da Costa, Wormley, Leidy and Foote.

Medicine had occupied a notable place in the history of art, many physicians themselves being illustrators of their own works and *pari passu* with the advance in art, medical illustrators had gone on improving. Studying the pictures made for the lecture three stages of engraving could be traced, the simple outline of curved or straight outline in the wood block to represent form only, then the remarkably successful attempts to depict chiaroscuro by shading and lastly the attempt to reproduce warmth and texture, to give tone and color effects. The second was brought to a high state of perfection by Albrecht Dürer in the sixteenth century. The first dated copper plate engraving was a crude representation of the flagellation of Our Lord, engraved in 1446. Of illustrations in medical works, except in manuscripts, the earliest the lecturer had yet found mentioned was an edition of Marianus and Albucasis (1484) illustrated by woodcuts, and a folio of Mundinus (1498) edited by Morsiano in which, according to Choulant, there were woodcuts. The most ambitious attempts in the association of the art of engraving with medicine were in the elaborate frontispieces of the big folios in the sixteenth and seventeenth centuries, the artist seems to have felt that here his talent had room to exercise itself as the skilled fingers pushing the burin followed the play of imagination and he depicted the teacher and his students or devised idealized tutelary divinities inspiring the theme.

The practical conclusions to be drawn from the lecture were that art was the indispensable handmaid to medicine; that the best artists were not too good for high grade medical books and that all doctors should insist that books should have the best illustrations because such might teach more and even render the text superfluous. To insist that illustrations measure up to the generally high price of the book and encourage artists to enter this field of medical art by duly appreciating and remembering their labors was the duty of all medical men.

A vote of thanks to Dr Kelly was then passed, and he was unanimously elected an honorary member of the Society.

EXPERIMENTAL MEDICINE SECTION

The thirty-eighth regular meeting of this section was held Friday, April 10, 1908, at the Cleveland Medical Library, C. A. Hamann in the chair. The program was as follows:

1. Some Observations on Graves' Disease in Dogs, D. A. Prendergast and G. W. Crile who said in part: "At a previous meeting of this section

we reported some observations from a clinical standpoint upon the psychic factor in Graves' disease.* Soon after our first observations were made and while on the lookout in the laboratory for cases of Graves' disease in dogs, we were fortunate in finding two with this disease, at least this diagnosis seemed well founded and was accordingly made. The dogs exhibited the following symptoms: extreme nervousness, muscular weakness and tremor, a daily temperature range, marked gastro-intestinal disturbances, diarrhea and emaciation. The thyroids showed a distinct thrill and were large, soft and vascular. No exophthalmos was noted but as this is not always a symptom of Graves' disease in the human being, it may not be a necessary symptom in dogs. These dogs, therefore, having tachycardia, temperature curve, loss in weight and muscular strength, an increased appetite and thirst, gave a good picture of Graves' disease. They furnished an unusual opportunity to test our clinical observations and we therefore carried out a course of experiments upon them. Each dog was observed for several days to determine as nearly as possible his own phenomena. After this was done the animal was subjected to various forms of psychic excitation, such as fear or anger. The first animal particularly was easily thrown into a state of marked excitement by fear. When the animal was frightened either with a whip or in various other ways, he would have a marked rise of temperature after about six hours, tachycardia would be very marked, trembling, gastro-intestinal symptoms and even diarrhea would appear. The temperature would gradually fall, the mental symptoms subside, the tachycardia diminish and the dog would return to his former condition. It was found that producing anger in the absence of fear also caused toxic symptoms. Following these forms of excitation the animal exhibited symptoms comparable with those occurring in the human being with Graves' disease. To make the parallel closer we planned anesthetizing the dog, after first exciting him. Following this the dog showed very marked hyperthyroidism. As a control the dog was given morphin half an hour before the anesthetic, the latter was very gently administered and continued for the same period and under like conditions as in the former experiment. The dog showed no symptoms whatever of hyperthyroidism. In our judgment these experiments compared very favorably with and were parallel to the different methods of carrying out anesthesia and operation upon human patients with Graves' disease. After repeating these experiments and performing similar ones on normal dogs so that it was obvious that we could throw these two dogs into a state of hyperthyroidism by psychic excitation, we then tried to produce similar symptoms by injecting, in various doses, the juice of the thyroid glands of dogs which had been expressed by means of the Buchner press. This juice was given hypodermically at different times and in varying doses to the two dogs and to normal dogs, so that, in all, 10 dogs received the juice. The effect upon the two groups of animals following the injection was very marked. In the dogs with Graves' disease the symptoms appeared and lasted longer and with greater severity than in the normal dogs. In them an injection caused a rise of temperature appearing after six hours and continuing from three to five days and in one case 10 days. The symptoms in all the dogs following the injection were those of hyperthyroidism but they were more marked in the dogs with Graves' disease than in the others. As a control the juice from the kidneys, liver, etc., was administered in perhaps 20 times the dosage of that of the thyroid juice, but it was found that it produced no symptoms that could be confused with those of Graves' disease.

These observations conform precisely with our observations made upon human patients. They form but a rough outline of our conclusions—a summary of the work. The observations were carefully made, the laboratory was kept open day and night, two hour temperature and pulse observations were made. There was very little chance for error.

Since our first report (*loc. cit.*) we have made observations in 10 other human patients operated upon for Graves' disease, the operations being performed according to the plan we previously outlined. Our hypothesis was that in Graves' disease the greatest power of excitation came through the psychic forces, and that in some way, either directly or indirectly, psychic excitation discharges into the circulation an excessive amount of thyroid secretion which, in itself, may be capable of causing death; that the greatest factor in the mortality was not the operation *per se,* if well done, but what had occurred to the patient before surgical anesthesia was reached, in other words, at the time the surgeon began to make his first incision the fate of the patient had already been sealed. The purpose of these experiments was to see if this could be corroborated experimentally. Our later experience would have made these experiments almost unnecessary, because a further observation of these cases in the clinic has fully supported our first hypothesis. In none of the 11 cases thus far operated upon have we had a death or even a very grave illness from hyperthyroidism. Since we have removed the gland without the patient's knowledge we have been successful,—not only successful at the time being, but the patient has been relieved clinically. The relief that follows the removal of a thyroid gland in acute Graves' disease is comparable to that following excision of the Gasserian ganglion for neuralgia.

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*Clev. Med. Jour., Feb., 1908, p. 108.

We had an unusual opportunity of making observations in two cases, in one of which the patient knew and in the other did not know that the operation was to be performed. The parallelism of the two cases was so complete that it could not have been more so, even if planned. We supposed in each instance that the patient did not know that the operation was to be performed, consent having been obtained prior to entrance to the hospital. There was a mimicry of all the preparations for operation two or three days prior to the actual operation. What was supposed to be inhalation treatment was merely paving the way for the anesthetist to go into the room and give ether very gradually without the patient's knowledge, then, in the second degree of anesthesia, the patient was taken to the operating room. It usually happened that the patients did not know that the gland had been removed and sometimes did not discover it until three or four days after the operation. They sometimes complained of soreness of the neck and we have said, and truthfully, that it was due to the treatment.

These two patients referred to were of about the same age, had almost the same grade of acute Graves' disease and in both, we supposed we were carrying out the exact plan outlined. The patient whom we supposed to be the worst, whose heart was most dilated, and whose tachycardia was most marked, was operated upon first. She knew nothing of our plans and the gland was removed without her knowledge. The second case we supposed to be more favorable, but, unfortunately, she had been approached by a friend who knew our plan and had been told all the details, that she would know the morning of the operation because that day she would not have any breakfast. The patient gave us no intimation until after the operation was over that she had been warned, then she said she had not been deceived. The anesthetist felt satisfied that the patient knew and feared the operation. She died, about 12 hours after the operation, of hyperthyroidism. The other patient made a splendid recovery. These two cases were parallel. The patient's temperature at the time of death was 107 and it rose almost a degree after death. The pulse rate ran up in the usual way and she had all the symptoms of hyperthyroidism. We feel, then, from the experience of 11 clinical cases and from the two cases of Graves' disease in dogs, more than ever confirmed in our original view, that the key to a successful operation in Graves' disease is the elimination of the psychic factor.

In discussing the paper D. Marine said that although he was not familiar with the true psychic side of the question he had been informed by several surgeons that persons affected with nervous disease withstood operation much worse than normal individuals. Psychotherapy is a factor in all nervous conditions but is not applicable to only one group of patients. The term exophthalmic goiter is misleading when applied to dogs. Veterinary literature contains many references to it as occurring in dogs and all other domestic animals and many wild animals. What is meant is a condition occurring in goitrous districts, viz., marked tachycardia, anemia, and a certain degree of nervousness, and which is more properly described as a cretinoid condition. The nervous manifestations in animals are not prominent and he had never seen or known of a case in which a true exophthalmos existed. While the essential nutritional disturbance is the same in all animals including man, thus far examined and which have hyperplastic goiter, yet the terms exophthalmic goiter or Graves' disease usually imply an exophthalmos and marked nervous manifestations which do not occur in animals and therefore these terms are not strictly correct when applied to them. It is in dogs we see the true cretinism, perhaps also in sheep, cattle and hogs. The young are born with huge enlargement of the thyroid and an enormous thymus, also, as a rule, enlargement of the spleen and of all the lymph glands. This is the condition we associate with cretinism occurring in the young. If it is not too bad they tend to recover spontaneously but the condition may go on to a very marked grade and be associated with hypertrophy of the heart. The tissue changes are the same in all animals having this disease, the thymus shows the same changes and is enlarged, the spleen is also enlarged. In dogs while the disease is probably in essence the same condition as true exophthalmic goiter yet the phenomena of nervousness and exophthalmos are really accessory and accidental and it is doubtful if they actually occur in animals. Hyperplasia of the thyroid occurs in about nine percent of the dogs in this district and to a less extent in sheep and hogs.

F. C. Herrick asked if the speaker had had any experience in operating, for other conditions, upon patients with Graves' disease. He had operated upon two patients with marked Graves' disease performing a perineorrhaphy upon one and an appendectomy upon the other but neither showed nervous symptoms following the operation. He also inquired whether the speaker had observed a sudden rise of temperature following sudden fright in patients with Graves' disease.

A. R. Baker spoke as follows: "Some of you probably remember that Roswell Park, of Buffalo, a few years since delivered a lecture on Graves' disease, in which he pictured the horrible death that was sure to overtake these individuals. I could not resist remarking at the time that the only deaths I had seen in these cases were those occurring on the surgeon's table. This did not seem to meet with the approval of the surgeons present, and yet, talking with the general practitioners, their experience seems to be similar to mine. You know that the exophthalmos is one of the prominent symptoms, and very naturally they seek the ophthalmologists for relief. Very many of these cases have errors of refraction. I have fitted them with glasses, and because of breaking the glasses or for other reasons these patients keep returning, so that many of them I have had under observation from five to 20 years. I wish to speak of 50 cases which I have had under observation, which are only a very small number of those seen. These were typical cases, they had the tachycardia and tremor, and all the symptoms of Graves' disease. Of this group of 50 cases, six have died. Three of them died on the surgeon's table. Of the other three, one died of pneumonia 12 years after I first saw her; another died during childbirth, after being under my observation for her Graves' disease for 15 years; and the third died of pneumonia nine years after I first saw her.

In closing the discussion G. W. Crile asked whether D. Marine thought that the thyroid gland is about the same in its distribution throughout the animal kingdom and whether its diseases in animals are similar to those in man. Personally, he was unable to follow the argument that dogs do not have Graves' disease. It was a great misfortune that the term exophthalmic goiter had been used, one of the most insignificant symptoms seems to have caught the attention of the public. He believed that some of these dogs having the following clinical picture are properly described as having Graves' disease, viz., an animal that shows a large, vascular, pulsating thyroid gland, coming on acutely, attended with rise in temperature and tachycardia, with relaxed vascular symptoms, with the metabolic changes such as occur in Graves' disease, with the voracious appetite, with the gastro-intestinal symptoms, and with all the symptoms of the tremendous metabolic changes that occur. We can readily understand that there may be a difference in the form of the eye. Clinically, the physiologic test is after all *the* test. If a certain disease produces certain marked physiologic changes, that becomes the important test. According to his view of Graves' disease he could not help feeling that the metabolic changes are the most important, and if the biochemists will give us some way in which they may be obviated, the key to the problem has been discovered. In regard to operations upon other parts of the body in patients with Graves' disease, Barton Cooke Hirst has shown that the mortality rate is just about as high in these operations as in those upon the gland itself. He had seen death in a case of fracture in a patient with this disease and there are many instances in which they have been killed by psychic shock. N. C. Yarian had related to him the death of a patient with Graves' disease who was really frightened to death by a drunken husband. He had known death to occur from acute grief and we see the disease itself begin with great mental strain and grief. He was sure patients had succumbed upon the operating table in this way, and although the dog upon which they had experimented had not been killed by fright, he certainly had undergone great distress. He wished to ask A. R. Baker whether his cases had been cured by correcting the refraction or if they had been treated in other ways, if correcting refraction has cured these cases it would seem like an easy cure. The surgeon's results are in the hospital records and he cannot avoid the common knowledge of the immediate results of his work. The operator is only too sure of these results and carries them in his mind, while it is an easy matter for any one with a large ambulatory practice not always to know the terminal stage of his cases. Regarding the point raised as to the purpose of operation he would refer to the statistics of Kocher and Mayo. Anyone who succeeds in removing a gland in Graves' disease will be rewarded by the most striking relief that one can see in any disease except, perhaps, when the Gasserian ganglion has been removed for trifacial neuralgia. Surgery has had a hard time in attempting to solve the problem and it is hoped the internist will remove the necessity for operation. Heretofore, patients have come to the surgeon in the late stages of the disease when they are no longer good surgical risks. The public has begun to have confidence in the results since the surgeons have practiced the gentle operation. He could not accept the pessimistic view of A. R. Baker and would refer him to Kocher's article, in which he says that in not a single instance in which he had operated had he ever found a patient not benefited or cured when a sufficient amount of the gland had been excised.

In reply, A. R. Baker said that if any one who is familiar with the literature will read carefully he will note that the tendency of this disease is toward recovery. These cases get well in from one to five years and it is very rare indeed that the patient dies of the disease, even the worst of them recover, in most hopeless cases the tendency is to get well. The surgeons seem to lose sight of this fact. So far as he knew there was no specific treatment but if there were such a treatment he would say it was rest, physical and mental, especially mental. If more stress were laid upon the psychic influences of these cases and less upon the thyroid, one would get much nearer the truth.

D. Marine said that the thyroid in dogs does have about the same physiologic activity as in man and presents about the same essential phenomena but in hyperplastic goiter the nervousness and exophthalmos are really the result of the disease and not the disease itself. The change in the thyroid is compensatory. In all animals the thyroid plays the same physiologic role and all animals have this disease which he had referred to as a cretinoid condition.

2. A Non-Pathogenic Throat Organism Morphologically like the Diphtheria Organism, R. G. Perkins. The speaker reported that the routine examination of the diphtheria cultures coming to hand showed an organism closely resembling that of diphtheria in morphology, though differing markedly in cultural characteristics. It was found in over four percent of the cultures and is likely to cause mistaken diagnoses among those who have limited opportunity for the examination of diphtheria cultures. The chief similarity is in the metachromatic granules, which resemble those of diphtheria. In differentiation, the diphtheria organism develops granules later, shows irregular forms in comparatively young cultures, has more tendency to parallel arrangement, and has much less definite outline to the cell body especially when there has been decolorization with acetic acid. Culturally the marked characteristics of the new organism are its tendency to early spore formation, and its active motility, making a sharp differentiation from diphtheria. It is apparently non-pathogenic and acts the role of an accidental invader.

In discussing this paper O. T. Schultz agreed with the speaker that this bacillus, owing to its close resemblance to the type of diphtheria bacillus showing metachromatic granules, was most important from the standpoint of the differential diagnosis of diphtheria. The reports from the large laboratories such as Boston seemed to show that the percentage of the diphtheria cultures showing the barred form of the organism is increasing, while the number of cultures showing the granules is decreasing.

3. The Numerical Relationship of Treponema Pallidum to Certain Pathologic Types of Congenital Syphilis, O. T. Schultz. By means of microphotographs and lantern slides the speaker demonstrated the numerical relationship of Treponema pallidum to certain pathologic types of congenital syphilis.

In the more readily recognizable form of the disease there are chronic inflammatory changes of a proliferative and infiltrative nature. In such cases Treponema pallidum occurs in relatively small numbers and bears a definite relationship, as regards localization, to the lesions. The pathologic change appears to be a reaction on the part of the tissues to the infection by the orgnism.

In a second type of neonatal lues, more difficult of recognition histologically, there are no pathologic changes that can be considered characteristic of syphilis. In such Treponema pallidum occurs in very large numbers. The condition appears to be an intense infection which leads to death before there is time for the development of pathologic change. For the establishment of the proper diagnosis in such cases the demonstration of Treponema pallidum is necessary.

In the chronic group the demonstration of the organism is also necessary for a proper diagnosis because a number of conditions, more particularly marasmus, are associated with pathologic changes which may render a histologic diagnosis difficult.

W. T. Howard in discussing this paper referred to the importance of the existence of these two types of neonatal syphilis and that the diagnosis is exceedingly difficult in that class which show very slight or no definite histologic lesions. Clinically these cases are often not supposed to have syphilis as the existence of the disease is easily overlooked. The diagnosis in such cases, therefore, is of great importance.

C. F. Hoover asked if the speaker had any theory as to the febrile reaction in syphilis. One would think that probably the cases of febrile syphilis occasionally seen in adults would be the very ones in which the organism would be in abundance in the circulation, and the curious thing is that the febrile cases are the ones in which the pathologic changes are least apparent He knew of one instance in which a woman contracted syphilis two years after marriage and after that for 14 years she had fever. The history showed that there had been no lesions of the skin or bones, one could make out distinct signs of lesions of the myocardium and spleen, although they were not marked. Her fever lasted until she was put on antisyphilitic treatment. There are other instances of very pronounced febrile reaction which have been overlooked on account of the absence of pathologic signs, in which patients have a very slight initial reaction and yet live long. He knew of one instance, a physician in Chicago, who had treated for about seven years for a constantly recurring fever. He was afterward operated upon for gall-stones and a gumma discovered. He was then put on antisyphilitic treatment and recovered.

G. W. Crile inquired whether any changes had been noted in the reaction of the blood-serum of infants with neonatal syphilis as compared with the serum of normal infants.

In closing the discussion O. T. Schultz thought that the continued fever without marked luetic lesions might be an expression of a peculiar localization of the organism. He had done very little work with the acquired disease. An interesting problem is the relationship of the organism to malignant acquired syphilis. The failure to find the organism in a large number of these cases is one of the arguments used against the etiologic relationship of the organism. He had found the organism in the throat lesions in two malignant cases of acquired syphilis, both patients died in spite of mercurial treatment, and he had been unable to find the organisms in any other of the tissues.

As to changes in the blood-serum very little had been done except to try the reaction of the parasites toward the blood-serum. When one is fortunate enough to get the living organisms in large enough numbers it is found that they are agglutinated by the serum of syphilitics, also the blood-serum of syphilitics has the property of complement deviation, but further than this he did not think that anything had been done.

ACADEMY MEETING

The fifty-seventh regular meeting of the Academy was held Friday, April 17, at the Cleveland Medical Library, the president, H. W. Rogers, in the chair.

N. S. Scott exhibited a testicle removed from a young man, 26 years of age, who had gonorrhea four years before. He denied syphilis. Between six and seven months ago he suddenly developed an acute epididymitis, quite a violent attack with severe pain. The pain subsided, as is usual, but the swelling did not and has continued to the present, and seemed to get rather harder as time went on. All the remedies were tried, both external and internal, ichthyol and mercury externally and iodid of potash internally, without benefit. He presented the specimen because of the difficulty in making a diagnosis from the gross appearance.

The program was as follows: 1. The Common Causes of Diseases Peculiar to Women, W. H. Humiston, who said in part that, excluding congenital malformations, there are but three or four etiologic conditions leading to the great majority of gynecologic diseases. These are gonorrhea, miscarriage and abortion, injuries and infections during childbirth and malignant disease.

Gonorrhea causes fully 75% of gynecologic diseases. This may be too high a percentage for rural districts as a whole, but it is true of a number of small towns in northern Ohio and in the cities. The complications of this disease can be prevented only by realizing the gravity of the infection and by early radical treatment of it. A discharge of sudden onset, increasing rapidly and staining the linen yellow, with irritation of the urethra and vaginal entrance, should be regarded and treated as gonorrhea. Microscopic examination of the discharge will prove conclusive. Treatment must be radical, the patient confined to bed, bowels kept regular, kidneys flushed by free drinking of water, and salol or urotropin internally. The vulva, vagina and os uteri should be thoroughly cleansed with soap, bichlorid and boric solutions. To do this thoroughly, preliminary cocainization may be advisable. After cleansing, dry the parts thoroughly, touch any spots with silver nitrate solution, dust thoroughly with iodoform and boracic, 1-7, and pack the vagina thoroughly with dry 5% iodoform gauze, applying a pad externally to be changed frequently. The packing should be changed every 24 to 48 hours for 10 days, then give zinc permanganate douches two or three times daily for weeks. After two weeks all evidence of infection and inflammation will have disappeared. Cases seen later may require a curetting.

Miscarriage and abortion figure next in frequency in causing infections of the pelvic organs. A threatened miscarriage should be treated expectantly when there is little bleeding and normal temperature, but only for a reasonable time, by rest in bed, anodynes, etc. Hemorrhage, pain, odorous discharge or a rise in temperature call for emptying the uterus under the strictest asepsis. The gloved finger should be used when possible but sometimes a dull curette is necessary. The uterine cavity should then be thoroughly flushed with salt solution.

The care and management of labor at term will avoid many later gynecologic operations. Asepsis is the key note and cleanliness in every detail is essential. External palpation will generally reveal accurately the child's position and internal examination with the gloved hand will confirm this, show the progress made and determine the capacity of the pelvis. Vaginal and perineal tears cannot always be avoided. After delivery thorough inspection should be made and vaginal and perineal tears immediately repaired. Immediate repair of the cervix is not indicated unless the tear is extensive and involves the circular artery as will be indicated by the free discharge of bright blood when the uterus is firmly contracted. In such cases the laceration should be sutured with chromic catgut under careful aseptic precautions. It prevents loss of blood and the weakening of the patient and thereby increases her resistance to complications. Most lacerations of the cervix will heal if no infection occur.

Malignant disease of the uterus offers hope only when recognized early by the general practitioner whom the patient first consults. An eroded cervix with intermenstrual loss of blood or pain is suspicious and demands a careful examination. If there is still doubt a small portion of the cervix should be excised and sent to a competent pathologist for examination. The routine examination of scrapings from the uterus occasionally reveals malignant disease of the corpus before any ordinary symptoms of cancer have appeared. Under such conditions the radical operation gives most gratifying results. Radical operation for cancer of the cervix gives little hope, the case is rarely seen before hemorrhage, pain and odorous discharge have appeared, and then it is too late for a permanent cure. The laity must be educated up to consulting the physician at the first appearance of intermenstrual bleeding whether attended by pain or not. He had a few cases living and well following extensive removal of uterus, appendages, half the vagina and the infected glands as high as the bifurcation of the aorta. The immediate mortality is practically nil but recurrences are frequent. Only early recognition of the disease and complete operation at once can alter our present results.

In treating acute pelvic inflammation, immediate operation is inadvisable, as nature will usually limit it to the pelvis. Early operation is dangerous as the germs are then active and pernicious. Later the whole process may entirely clear up but if not a later operation will not be dangerous. At the begining of an attack absolute rest in bed, attention to the bowels and kidney functions and application of ice to the lower abdomen are indicated. Opiates are rarely needed. Hot antiseptic douches are advisable. Strychnin and alcoholic stimulants may be needed.

The office treatment of pelvic disease when unsterilized instruments are employed results in many infections. Dilating the cervix, introducing a sound to measure or replace the uterus or curetting the uterus in the office should be condemned. The trained touch by a bimanual examination is usually sufficient to make a diagnosis and an anesthetic will clear up the few exceptions.

A brief case report of septic infection following abortion and a subsequent curetting in a physician's office is instructive. The patient missed a period in January 1907 and in February a physician induced abortion by passing a catheter. The patient was confined to bed and lost much blood the next week. The physician then curetted her in his office and sent her home in the street car. Within 24 hours a severe chill occurred, followed by high fever. For three days she grew steadily worse and was then brought to the hospital. She was anemic, feverish and had profuse sweats. Pulse 120 to 132. Temperature by the mouth 104. Abdomen distended and painful to slight pressure. Pain severe and opiates had been given freely. Pus was escaping from the uterus and the vagina was eroded in spots. Urine scanty, high colored, and contained albumen and granular hyaline casts. Ice bags were applied to abdomen and head, a vaginal douche was used frequently and the bowels cleared out with castor oil. Strychnin and whiskey were administered at regular intervals but no opiates. A vaginal examination revealed a fixed uterus and a choked pelvis, with a fluctuating point posterior to cervix. She was placed on the operating table and the sub-mammary injection of normal saline solution started. The vagina was cleansed and the posterior vaginal vault cocainized. A pair of sharp-pointed curved scissors was thrust through the cul-de-sac, spread and withdrawn and a pint of foul smelling pus escaped. With a double canula the abscess cavity was thoroughly flushed with saline solution and a drainage tube inserted and the patient returned to bed without shock. She steadily improved for two weeks and her temperature was normal in the morning and not higher than 100 in the evening. Pulse 90 to 100. Sweating subsided and patient was taking a fair amount of nourishment. The distension of the abdomen subsided partially, but a mass could be made out extending to the umbilicus. The temperature and pulse steadily rose for three days, and the sweating returned. On April 6 the temperature was 103, pulse 140 and the patient was rapidly growing weaker.

It was decided to open the abdominal wall down to the large abscess and drain. Realizing she would not survive a radical operation, she was given a small amount of ether, and a sub-mammary injection of saline solution. The peritoneum was firmly adherent to the abscess wall, it was separated only sufficiently to admit a cyst trocar to tap the abscess. A quart of foul smelling pus flowed out, after gentle irrigation a drainage tube wrapped in gauze was inserted and the patient placed in bed. Two quarts of saline solution were used under both breasts. She was taken off the operating table in better condition than she went on, and her improvement was marked each succeeding day until, at the end of six weeks, she went home. Her husband had been told that a radical operation would undoubtedly have to be done later, but on making a subsequent vaginal examination the uterus was freely movable, the vault of the vagina was free and no tenderness could be elicited. At the present time, one year since operation, she menstruates regularly and with but little discomfort, she has regained her normal weight and has good color. Urinary examination is negative. A not unusual case, but an *unusual* result.

In discussing the paper F. E. Bunts said that he was very much interested in this resume of the causes of gynecologic trouble. There were two features of special interest; one emphasizing the importance of non-interference in the acute inflammatory stage, this is something often lost sight of. Probably in most of these cases the infection becomes sterile and the operation becomes a safe one if we can only keep our fingers off long enough. One of the great aids is to put the patient on the Ochsner treatment. His own practice was to delay until after the temperature became normal. The Ochsner treatment will ordinarily bring the temperature from 102 or 103 to 99 within 36 hours, continuing from then on until practically normal, the pus becomes sterile, absorption of septic matter ceases, and when all acute symptoms have ceased after several weeks the operation of removal of the pus tubes becomes a safe one.

The other feature of interest was the treatment of cancer of the uterus. The speaker had drawn attention to the fact that if we can get cancer of the fundus early, the radical operation is very satisfactory and a large percent remain permanently cured. Cancer of the cervix is one of the most disappointing things he knew of if one did a radical operation. Once in a while they remain cured, but in the vast majority there is a return, even if the uterus, tubes, and a portion of the vaginal vault were removed. He had practically given up vaginal hysterectomy in cases of cancer of the cervix, and thought the better treatment was cauterization. That in this way the cancer of the cervix is not only destroyed, but undoubtedly the effect, spreading into the lymphatics must be to destroy some at least of the cancer cells. He had a number of cases that were permanently cured by this method of treatment. In others, when the cancer had gone on to extensive invasion, cauterization of course could not accomplish such brilliant results. It stops the hemorrhage, destroys the odor, and the patient picks up and grows stronger. In these cases one has the chance to cauterize again. He had some who lived three or four years in which he had cauterized two or three times.

In the last three years he had adopted another method, that is, after cauterization, and cicatrization had taken place, he used acetone, by inserting a speculum and leaving the acetone in contact with the cervix from 20 minutes to half an hour, repeating this at regular intervals. This will destroy the odor if the carcinoma had not been removed. He was sure it delays the return of carcinoma. In two cases now under observation it seemed to be holding the disease pretty well in check and to be a valuable aid.

C. D. Williams thought that in regard to the pelvic inflammatory conditions the speaker's account was correct. Gonorrhea is responsible in about 70% or 75% of the cases for the pelvic inflammatory condition. Tuberculosis has to be considered in addition. It is not an infrequent pathologic condition in the pelvis. In 144 tubes removed on the gynecologic service of Lakeside Hospital it was present in the tubes in 16.6%; and in 150 ovaries removed, most of them resections (in very few cases were both sides removed), tuberculosis was present in 8.5%. In gonorrheal infections or in infections following labor or miscarriage, it is very often impossible to prevent involvement of the peritoneal structures. The disease progresses rapidly from the uterine cavity out through the tubes, and involves the peritoneal surfaces. In infections following labor the inflammation has gone beyond the reach of the curette. In these cases it is well to open up the cul-de-sac of Douglas. The most of the pus forms in the tubes and in this way we prevent the formation of abscesses and get free drainage. In these cases there is no more reason why the tubes should be occluded than the urethra. If we get good drainage through the cul-de-sac and through the vagina we find that we do not have to go in later. If we do this early we get the best results.

W. H. Humiston in closing the discussion thought that F. E. Bunts was perfectly correct in putting a bad prognosis on all malignant diseases of the cervix, because we do not see them early and the disease has progressed beyond the uterus.

Wertheim is having some really astonishing results. He was permitted to see him operate two years ago and to see cases which had been operated upon several months prior to his visit, and he certainly was doing a great deal in that line and receiving cases from surgeons throughout Austria that were supposed not to be operable. It is the hemorrhage and loss of strength that gives an immediate fatality. The trouble with malignant disease of the cervix is that we do not see them until they have this trio of symptoms, pain, hemorrhage and odorous discharge, and then we know that the glands are affected and infected much beyond the limits of any operation for amputation or removal of the uterus.

Burns, 25 years ago, used the cautery very extensively and he showed a much better percentage of recoveries than from any other operative measures then in vogue.

He had not had any experience with the acetone treatment as applied to the cervix; that may check the process of the cervix perhaps, but if there be sloughing and these other symptoms the infection and development is farther in and up the chain of lymphatics and he did not see how this treatment would affect the development higher up.

The infection following labor or miscarriage from injury is usually through a different route than gonorrhea.

In injuries after abortion or labor at term the infection is usually taken up by the lymphatics and the irritation is entirely different from that in gonorrhea.

Tuberculosis is undoubtedly quite common, but he was surprised to learn it is so frequent as was stated; he supposed three or four percent would be high enough for the uterine structures; it certainly had not been more than that in his experience or observation.

2. Some Stomach Surgery Observations as Illustrated by the Stereopticon, by N. Stone Scott, who showed that many phases of the subject of stomach surgery are very difficult of being depicted by photography because of the complex arrangement of the parts involved, making it next to impossible to get them all in the field at one time, and yet, as a means of class room demonstration the stereopticon is ahead of every other means of illustration except the demonstration upon the cadaver, not excepting the operation upon the living subject.

He claimed that the subject of stomach surgery was greatly stimulated and in fact, in America, practically began with the work of that master surgeon, the late Nicholas Senn.

A short review of the development of the operation of gastro-enterostomy was given, showing how his own work, beginning with a simple gastro-enterostomy, first performed in September, 1891, had gone through the same stages of development as illustrated by the work of Wolfler, Von Hacher, Lücke, Döyen and others, and in recent years coming back again to the more simple "no loop" operation, as practiced at the present time by Moynihan.

Photographs were shown illustrating the rapidity with which some cases recover, as, for instance, the new pylorus will assume its sphincteric action in 10 days and the enlargement of the stomach, so marked before operation, will disappear even more rapidly.

Of especial interest, however, were the photographs taken from a case of congenital stenosis of the duodeum showing changes in the portion of the alimentary tract which was exposed to the atmosphere at the time of the operation, which changes were not apparent to the eye but were clearly demonstrated in the photographs. The patient died in shock 14 hours after operation. The changes in the tissues were evidently due to light, heat, air, or some influence exerted at the time of operation, and were not due to traumatism or hemorrhage, as all the parts exposed to the air, both those near the operation site and those remote, were equally involved. This again demonstrates that not only can the camera show the presence of the exanthemata before a rash is apparent to the eye, but here also are changes in the tissues of the deeper parts, not due to disease, which the eye cannot detect, but which are clearly shown in the photograph.

W. E. Lower in discussing the paper said that surgery of the stomach is really divided into two periods—before and after the interesting work of Cannon. During the first period the stomach was supposed to be a mere sac without any definite physiologic function, and during this time anastomosis was done for dilatation and various forms of so-called stomach disorder in neurasthenic cases. Cannon's very interesting work demonstrated that no matter how well a gastro-enterostomy was made, if the pylorus remained patent, the stomach contents would pass through the pylorus and not drain out through the new opening as was supposed. This at once suggested the impropriety of trying to drain the stomach by gastro-enterostomy with an open pylorus.

The second period dates from the discovery referred to, and has limited the indication for gastro-enterostomy to practically two conditions.

First, a stenosis of the pylorus, and, secondly, ulcer of the duodenum. In the former condition (complete stenosis of the pylorus) it does not matter much what operation is done, good results are obtained. In the second instance (ulcer of the duodenum) the best results are obtained when the pylorus is closed by some form of plication and the contents of the stomach forced through the new opening. The ideal method is undoubtedly the short posterior no-loop operation.

He would like to have heard more of the speaker's results in stomach surgery. We should look more to results than to methods and to select the proper cases for gastro-enterostomy. One thing is certain, that nothing is to be gained by operations on a large class of neurasthenic cases in which there is gastroptosis and no obstruction.

N. Rosewater said that he often wondered why it was that he had had so few cases to send to the surgeon. In a period of 11 years he had sent five cases to the surgeon. All his drainage cases yielded better to treatment, and the only ones requiring operation were those in which there was stenosis. Those cases spoken of as duodenal ulcers do well with proper drainage. He had seen cases of dilatation, as bad as those shown, that inside of three months time with proper abdominal support, rest and proper diet, begun with rectal feeding until the stomach contracted as far as the umbilicus, then two meals a day, finally got proper drainage. In fact one gets perfect drainage as long as there is no stenosis. If patients stand on their feet one cannot get drainage.

M. D. Stepp asked whether the speaker still closed off the pylorus as formerly. Also how far away from the gastro-enterostomy he made his entero-anastomosis and whether he used the stitch method or Murphy button. If he used the latter to any extent what had been his experience with its being followed by other gastric troubles, such as gastric ulcer.

N. S. Scott in closing the discussion said he thought that N. Rosewater had done pretty well to have five stomach cases to refer to the surgeon in 11 years. The cases that need to go to the surgeon are not so very common, and yet they are more so than they seem to be at first.

The results are what we are after, the method is not of much importance. He had had beautiful results from all of the methods. In these cases of true stenosis of the pylorus, if one does a gastro-enterostomy or any other operation upon an hysterical patient one will not get results. This is true in all cases of surgery. An hysterical patient after any operation is going to complain as much afterwards as before.

There is no class of patients so thankful for the relief they get as the stomach cases with a stenosis. The cases reported as cured are not completely cured. They have troubles, but people, not having had a gastro-enterostomy, have troubles. All gynecologists will recognize the fact that their patients have bilious attacks, and have to be careful of their stomachs. These cases having had a gastro-enterostomy have to be careful, but they are extremely thankful for the relief they get.

In regard to technic, he was not a very warm advocate or very diligent user of the Murphy button, favoring rather the needle and thread, and yet there are cases in which the Murphy button is very useful. In two conditions it is particularly useful, in making an anastomosis between the gall-bladder and intestine, the gall-bladder wall being too thin to suture, and in malignant stomach disease. At first he operated upon quite a number of malignant stomach cases and they nearly all died, but lately he had refused to operate in such cases when a positive diagnosis could be made. He hoped the time would come when the medical men would cooperate more fully with the surgeons. They are in the place now with stomach surgery that they were with appendicitis 15 years ago. He hoped the time would come when these cases of malignant disease of the stomach will come to operation early. The complicated operations which were so pretty to read about and interesting to study are going out of vogue largely and the simple operations have been used more in recent years. The simplest of all is the posterior gastro-enterostomy with no loop.

3. Essential Hemorrhage of the Kidney, F. E. Bunts. (Appearing in full in June issue). W. E Lower in discussing the paper said that essential hemorrhage of the kidney implies bleeding without demonstrable cause. He doubted if there really were such cases for it is hard to conceive that we have a bleeding without some lesion. In many cases, however, no lesion seems to be apparent, yet no doubt by proper methods and a more careful search the cause would be found. He thought fewer cases of essential hemorrhage were being reported each year because of better methods of determining the cause. Nephritis might be responsible in many of these cases, but one would expect more constitutional disturbances than many of these cases show. In 139 cases of hematuria under his observation about one-half of them showed renal hemorrhage and the causes were mainly tuberculosis, renal and ureteral calculus. There remained, however, 22 cases which were unclassified. In these cases he was unable to definitely determine the cause. Several of them were operated upon because of the extreme debility on account of loss of blood. In two cases he did nephrectomy. In one case a small calculus about the size of the head of a pin was found. In the other case there was an area of softening, but it was not tuberculous. A later pathologic report was never had. In a number of cases the hemorrhage after continuing for a certain period spontaneously stopped. In one case there had been bleeding for six years. The patient was told that if this did not stop within a short time he must be operated upon. Within three days the hemorrhage stopped and he has not had any since. This was more than two years ago. In one case in which there was pronounced nephritis the hemorrhage was present only on one side.

One notable and rather interesting fact in hematuria is that a large percent are painless; the first thing noticed is blood in the urine and there is no pain unless there is clotting, but in 85% of the cases there is a definite pathologic lesion responsible for the hematuria. He had seen hematuria in pregnancy, typhoid fever, and several other cases of pyelitis. He thought all cases of hematuria should be thoroughly investigated for the cause, for in a number of cases it may be the first symptom of begining malignancy or some other grave lesion.

F. W. Hitchings thought there was some possibility of these cases being successfully treated by other than surgical measures. He had closely followed the work of Weil, of Paris, in controlling pathologic hemorrhage of various kinds by injecting the fresh serum from man, horse, or rabbit. Cases of hemophilia and purpura which had failed to respond to all the ordinary hemostatics had been controlled completely by this simple means. The serum must be comparatively fresh—cannot be over six days old—in order to obtain results. In cases of apparently essential hematuria in which no definite lesion can be discovered, it might be advisable to try injections of this kind. Weil had had no cases of hemolysis as far as he had been able to ascertain.

F. E. Bunts in closing the discussion said that of course a large percentage of hemorrhages of the kidney must come from lesions really demonstrable. In these 70 cases lesions were not present; the kidney was cut down upon and no stone found in any of them, and in only one case was tuberculosis deemed present. There was no question but that some very small lesion is sufficient. Abbe reports such a case in which a small piece of gravel seemed responsible.

He had been very much interested in this matter of serum injection. He had not used it in any of his own cases but had advised it in consultation in a case of hemophilia in which the man had been bleeding for four or five days. The hemorrhage ceased, whether the serum stopped it he could not say. However it was well worth trying.

Book Reviews

An Index of Treatment by Various Writers, edited by Robert Hutchison, M. D., F. R. C. P., Physician to the London Hospital, and Assistant Physician to the Hospital for Sick Children, Great Ormond Street; and H. Stansfield Collier, F. R. C. S., Surgeon to St. Mary's Hospital; Joint Lecturer on Surgery in St. Mary's Hospital Medical School; Surgeon to the Hospital for Sick Children, Great Ormond Street. Revised to conform with American usage by Warren Coleman, M. D., Professor of Clinical Medicine and Instructor in Therapeutics in Cornell University Medical College; Assistant Visiting Physician to Bellevue Hospital, New York. William Wood and Company, New York, 1908.

This is a new work upon treatment, and comprises within a single volume, of moderate size, a most satisfactory summary of the most recent and approved methods of practice. It is alphabetically arranged, and is essentially a practical work, its contributors representing the leading British practitioners. It has been adapted to our use by Warren Coleman, who has brought the prescriptions into conformance with the preparations of the U. S. Pharmacopœia. In the non-operative treatment of acute general peritonitis the value of hypodermoclysis is urged. In hysteria, suggestion plays a prominent part, drugs being of minor value, and hypnotics and analgesics are to be avoided. In arteriosclerosis, special stress is placed upon the use of mercurials, and the concise summary of the uses and indications of the cardiac tonics in cardiac valvular disease is excellent. In the treatment of nephritis the true position of renal substance or extracts is stated to be unsettled, or still in the experimental stage, although the authors' results in this line justify further use. The present status of bacteriotheraphy is well defined.. The work includes surgical treatment, although that of obstetrics scarcely comes within its scope and is omitted. The book throughout shows careful preparation, and is a most complete and convenient therapeutic guide.

Diseases of the Heart. By Prof. Th. von Jürgensen, of Tübingen; Prof. Dr. L. von Schrötter, of Vienna. Edited, with additions, by George Dock, M. D., Professor of Medicine, University of Michigan, Ann Arbor. Octavo of 848 pages illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $5.00 net; Half Morocco, $6.00 net.

This book of 826 pages is a very complete and exhaustive treatise on diseases of the heart. The contents are divided into five subdivisions, viz: Insufficiency (weakness) of the Heart, Endocarditis, and Valvular Disease by Theodor von Jürgensen; Diseases of the Myocardium and Nervous Diseases of the Heart by L. Krahl, and Diseases of the Pericardium by L. von Schrötter.

The causes of cardiac insufficiency are divided into two main groups: (1) Those which directly affect the heart and injure its mechanism. (2) Those which affect the heart indirectly by preventing it from receiving the amount of blood necessary to enable it to perform the work required of it. These causes are taken up in great detail by the author, and the clinical histories and pathologic reports of numerous cases are cited to exemplify these conditions. These clinical reports are printed in fine type so that they do not add much to the size of the book. The symptomatology and treatment of cardiac insufficiency are exhaustively considered.

In the chapter on endocarditis the author states this fact, which is becoming more and more recognized by clinicians: "I do not think it is correct to regard endocarditis as a separate entity. 'Pancarditis' will be the diagnosis of the future. But he who makes this diagnosis must know how to distinguish the various parts which compose the whole, and to weigh the relative importance of each. The object should be, of course, in each individual case to analyze the composite picture of pancarditis into its constituents—endocarditis, myocarditis and pericarditis. We must remember, however, that these elements are only parts of the same disease."

The general pathology of valvular disease forms a very interesting chapter. This, as well as the course, diagnosis and prognosis of valvular diseases in general, is considered before the individual valvular lesions. Under tricuspid stenosis Dock has added a summary of the work of Thayer and MacCallum, who showed in their experiments on animals with what ease murmurs could be produced in the pulmonary artery.

Diseases of the myocardium occupy 342 pages. The author takes up in detail the examination of the heart and expresses the wish that internists would unite in the interests of medical instruction on the method and terminology to be employed in determining the size of the heart. This is the most complete and instructive chapter in the book.

In the last subdivision, diseases of the pericardium are exhaustively studied by von Schrötter.

Numerous additions to the original text have been made by Dock. He has also added many valuable references to English and American literature An extensive bibliography of the literature of cardiac disease is given.

This book is one that every physician should read, and Dock has done a great service to the medical profession by this translation.

Surgery: Its Principles and Practice. In five volumes. By 66 eminent surgeons. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila. Volume III. Octavo of 1132 pages, with 562 text-illustrations and 10 colored plates. Philadelphia and London: W. B. Saunders Company, 1908. Per volume: Cloth, $7.00 net; Half Morocco, $8.00 net.

This volume of Keen's Surgery contains some of the most important chapters in the whole work. There are 276 pages devoted to the Surgery of the Head by Harvey Cushing. In this masterly article we have a full and modern presentation of a department of surgery in which much remains to be done, to perfect it. Cushing's advanced work has made him an unquestioned authority in "Neurological Surgery."

E. W. Andrews writes on the Surgery of the Neck; the explanations of certain congenital defects on an embryologic basis should have been revised, for they have been to a large extent inaccurately and carelessly compiled.

The chapter on the Surgery of the Thyroid Gland is by Albert Kocher, who is well qualified to speak on this subject. In the section on the nose and its accessory sinuses one would like to see a more detailed description of removal of the tonsils, particularly of the operation of removal by dissection.

Brewer writes on the Surgery of the Larynx, Trachea and Thorax. The newest procedures such as bronchoscopy and the use of Sauerbruch's cabinet are discussed, but for many details one must turn to special treatises, as in a work of this kind these subjects, which chiefly interest specialists, can not be fully considered.

The section on Diseases of the Breast by Finney is excellent. The statement on page 584 that 8% of tumors of the breast are carcinomata, an apparent typographic error, might mislead some.

Edmund Owen contributes an excellent chapter on the Surgery of the Mouth, Teeth and Jaws.

The chapters on Abdominal Surgery by Munro offer an up-to-date presentation of the subject.

The chapter on the Surgery of the Oesophagus is written by Gottstein, a well known and original contributor in this difficult field.

One turns with especial pleasure to the article on the Liver, Gall-Bladder and Biliary Ducts by the Mayos, whose unrivalled experience well qualifies them to speak with authority.

Mayo Robson, as is to be expected, contributes a thoroughly satisfactory chapter on the Surgery of the Stomach, as does Moynihan on the Pancreas and Spleen.

As in the previous volumes the bibliography at the end of the various chapters adds materially to the value of the work as a reference-book.

Acknowledgements

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Eight Reprints from E. S. McKee, of Cincinnati, O.

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The Battle Creek Sanitarium System, J. H. Kellogg, M. D., Supt.

The Submucous Resection of the Nasal Septum, Otto T. Freer, M. D.

The Correction of Featural Imperfections, by Charles C. Miller, M. D.

Contribucion al estudio de la Baeteriologia del Tabardillo, Ignacio Prieto.

Mortality Statistics, 1906. Department of Commerce and Labor, Washington, D. C.

Transactions of the College of Physicians of Philadelphia. Third series, Vol. 29, 1907.

Proceedings of the Royal Society of Medicine, Vol. 1, No. 3. Longmans, Green & Co., New York and London.

Bier's Hyperemic Treatment in Surgery, Medicine and all the Specialties, by Willy Meyer, M. D. W. B. Saunders & Co.

American Practice of Surgery, by Joseph D. Bryant, M. D., LL. D., and Albert H. Buck, M. D., Vol. IV. William Wood and Company.

The Thermal Death Points of Pathogenic Micro-Organisms in Milk, by M. J. Rosenau, Director Hygienic Laboratory, Washington.

Reprints from Leartus Connor, A. B., M. D., Detroit; William Seaman Bainbridge, Sc. D., M. D.; Lee Maidment Hurd, M. D., New York.

Medical News

J. H. Jacobson, of Toledo, is taking a vacation in Europe.

J. H. Fisher, of Malinta, is suffering from a sprained ankle.

H. F. Biggar, of this city, recently made a trip to the south.

C. S. Hoover, of Alliance, spent part of the winter in the south.

Edwards H. Porter, of Tiffin, has returned from a California trip.

William P. Madden, of Xenia, is recovering from a serious illness.

G. Halbman, of Toledo, was held up in his office and robbed April 1.

C. O. McCune, of Unionville Center, recently suffered a stroke of paralysis.

A. P. L. Pease, of Alliance, has returned from a trip to South America.

H. W. Pyle and family, of Oberlin, have been visiting in Florida and the West Indies.

S. W. Brown and wife, of Fostoria, have returned from spending the winter in Florida.

O. S. Wood, of Logan, has been appointed trustee of the Athens State Hospital for the Insane.

Dudley P. Allen, of this city, returned early last month from a trip to Panama and the West Indies.

O. P. Andrews, of East Liverpool, has recently spent a week at Cambridge Springs for his health.

George D. Upson announces the removal of his office from the Hickox Building to the Hippodrome Building.

S. C. Boor, of Burbank, who met with a serious accident when thrown from his buggy, is recovering slowly.

William E. Hart, of Elyria, recently took an eight weeks post-graduate course in Chicago in surgery.

Ida Clark, M. D., of Youngstown, sailed on April 18th for Naples and will take an extended trip through Europe.

Chauncey Forward, of this city, who recently underwent an operation for appendicitis, is getting along very nicely.

J. J. Kinney, of Wooster, who underwent an operation some time ago in Charity Hospital, is in an improved condition.

S. Cook, who recently went to Eastern Pennsylvania from Deshler, O., has returned to Hicksville, where he will continue his practice.

The Athens Medical Society has been organized and includes every practising physician in the town. The fee-schedule has also been revised.

J. H. Lowman gave the fourth lecture in the University Lecture Course at Adelbert College, Tuesday evening, April 7, on "The Results of the Anti-Tuberculosis Movement."

Frederic S. Lee, Professor of Physiology in Columbia University, gave a lecture before the College Club on "The Aims and Achievements of Physiology," at Unity Chapel, Monday, March 30.

Howard A. Kelly, Professor of Gynecology at Johns Hopkins Hospital, addressed the Academy of Medicine of Cleveland, Friday, April 3, and next morning gave an operative clinic at Lakeside Hospital.

J. M. Garber and wife, of Plymouth, who have been spending the winter in Philadelphia, where the doctor has been attending lectures, returned to Plymouth for a short time and have since sailed for Europe.

The Youngstown Medical Library Association has been organized under the direction of the following board of trustees: Ida Clark, C. C. Booth, Sidney McCurdy, R. H. Montgomery and C. R. Clark. The books and medical journals will be placed in the custody of the Reuben McMillan Library.

Frederick C. Shattuck, Professor of Clinical Medicine in Harvard Medical School, gave a lecture upon ''Medical Ethics'' before the senior class of the Medical Department of W. R. U., and the Cleveland Academy of Medicine, Saturday evening, April 25, 1908, at the Cleveland Medical Library. The same morning he gave a clinic at Lakeside Hospital.

On Tuesday evening, March 31, T. Clarke Miller, State Councilor from Massillon, O., addressed the Cleveland Medical Library Association on ''The Psychic Factor in the Treatment of Disease.'' At this time, when there is so much agitation on the ''non-medical treatment of disease,'' this subject seemed particularly opportune. The lecture was a most interesting presentation of the subject and was greatly appreciated by the audience.

The Provisional Program has been issued for the Sixteenth International Medical Congress to be held at Budapest from August 29 till September 4, 1909. Members are supposed to affiliate themselves with one of the sections, the subscription fee being 25 crowns ($5.00). Members are allowed to take part in the work of sections other than those to which they are attached. A member is entitled to the reports of his own section gratis; reports of other sections cost 10 crowns per section or 150 crowns for complete reports. All correspondence is to be addressed to the Office of the Congress, as follows: Bureau du XVIe Congrès, international de Médicine, Esterházy-utcza 7, Budapest, VIII.

The Senate Board of Health in its twenty-second annual report shows that during the year 1907 there were reported 1018 cases of smallpox with only two deaths. The disease was present in 99 towns in 42 different counties. The Board advocates a modification of quarantine in smallpox. For persons who have been exposed to smallpox, unless they have no employment or fixed abode, a ''quarantine of observation'' is advised. By this is meant removal of the patient to the hospital, disinfection of his home, vaccination of all other members of the family who are then given their liberty, except that they are kept under the observation of a physician for 17 days from time of last exposure. This protects the public, greatly lessens the expense and makes enforcement of quarantine unobnoxious. The general report is concluded as follows: ''Unfortunately there is no means of knowing how many people died in Ohio last year nor, consequently, of what disease they died. The board has repeatedly called attention to this deplorable lack of a system of registration of vital statistics, for which our State is so frequently and justly reproached.''

Any physician who has in his possession any minutes of meetings of the old ''Cuyahoga County Medical Society,'' ''The Cleveland Academy of Medicine'' (about 1865-70), ''The Cleveland Medical Society'' (about 1870-74), or the ''Cleveland Pathological Society'' (about 1870-74), will confer a favor upon the undersigned by sending them for preservation and reference to the Cleveland Medical Library Association, 2318 Prospect Ave. H. E. Handerson, Chairman Historical Committee, C. M. L. A.

Charity Hospital Medical Society held its regular monthly meeting Wednesday, April 8, 1908. Program: Presentation of an Interesting Case, E. D. Neer; Syphilis of Eye; Report of Cases, C. C. Stuart; Acute General Peritonitis in a Ten Year Old Girl, F. E. Bunts.

St. Alexis Hospital Alumni Association held its monthly meeting at the Hollenden, Thursday evening, April 2. Program: The Use of Normal Saline as a Dressing in Minor Surgery, I. I. Yoder; Antiseptics with Special Reference to Bichlorid of Mercury, J. J. Dunn; Acute Lymphatic Leukemia, with report of case, Webb P. Chamberlain.

Lakeside Hospital has undergone extensive alterations during the past year. These include a new four story building for the resident staff of physicians, additions to the operating pavillion and an increased number of private rooms. About April 1, the new private rooms were opened.

These are situated in the two upper floors of the administration building formerly occupied by the resident staff. The capacity of the Hospital has been considerably increased by these additions.

The United States Government may allow the use of the new Congressional office building or part of the Capitol for the sessions of the International Tuberculosis Congress in September 1908. The Cleveland Board of Health will probably have an exhibit to illustrate the plan of fighting the disease in this city.

The Allen Society of the W. R. U. Medical Department met April 14, 1908. The following program was given: Congenital Syphilis, A. H. Dawson; Tuberculosis of the Kidney, E. E. Kepner; Locomotor Ataxia, C. W. Wyckoff.

The Lake County Medical Society held its forty-ninth regular meeting jointly with the corps of nurses of the Painesville Hospital and Lake County on Monday, April 6, at the Parmly Hotel, Painesville, Ohio. Program: Reports and Presentation of Cases; Miscellaneous Business; Address to Nurses and Physicians by J. H. Lowman, Cleveland, followed by several two-minute impromptu speeches.

The American Proctological Society will hold its tenth annual meeting at the Palmer House, Chicago, June 1 and 2, 1908. An attractive preliminary program has been issued.

The American Gastro-Enterological Association will hold its eleventh annual meeting at Chicago, June 1 and 2, 1908. An exceedingly interesting program has been provided upon which are papers by several Cleveland physicians.

The Huron County Medical Society met at Bellevue, Ohio, Thursday, April 9, 1908, at 2 p. m. The special program was as follows: Tuberculosis and its Treatment (Medical), J. H. Lowman, Cleveland; Tuberculosis, The Surgical Treatment, G. W. Crile, Cleveland; The Dual Action of Narcotic Drugs, Oliver H. Lau, Detroit, Mich.

The annual **meeting** of the American Medical Editors' Association will be held at the Auditorium Hotel, Chicago, on May 30 and June 1. An extensive and interesting programme has been prepared and every member of the Association is urged to be present and editors of medical magazines, not now affiliated with this Society, are also invited to meet with them.

The thirty-fourth annual meeting of the Mississippi Valley Medical Association will be held in Louisville, Ky., October 13, 14, 15, 1908, under the presidency of Arthur R. Elliott, of Chicago. Announcement has just been made of the selection of the orators for the coming meeting, by the President. The Address in Medicine will be delivered by George Dock, Professor of Medicine in the University of Michigan, Ann Arbor; and the Address in Surgery by Arthur Dean Bevan, Professor of Surgery in Rush Medical College, Chicago. The local Committee of Arrangements in Louisville has selected the Seelbach hotel as headquarters, the general sessions and the section meetings being held in the hotel's large auditoriums. One of the features of the entertainment projected is a smoker in the famous Rathskeller of the hotel—the finest of its kind. The McDowell button, so much admired at the 1897 meeting in Louisville, will be reproduced in bronze for this meeting.

American Academy of Medicine.—Preliminary program for the thirty-third annual meeting, at Chicago, May 30 and June 1, 1908. The meeting should receive and discuss the reports of the following committees:

"On the Best Means for the Medical Profession to take part in the Education of the General Public in Medical Matters through Publications, etc.," Edward Jackson, Denver, Chairman.

"On Teaching Hygiene in the Public Schools," and in connection with this the report of our Delegate to the Second International Congress on School Hygiene, London, 1907, Helen C. Putnam, Providence, Chairman.

"On Conference with Educational Institutions on Medical Education," Charles McIntire, Easton, Pa., Chairman.

As the proceedings of this conference are published in the last number of the Bulletin and in this, this report will be considered along with the report of the special committee appointed at the conference to formulate conclusions from the papers and discussions, John L. Heffron, Syracuse, N. Y., Chairman.

The report of the Delegate to the Annual Conference of the Council on Education of the American Medical Association, Charles S. Sheldon, Madison, Wis.

"To Collect Data as to the Amount of Damage Done by Alcohol in Moderate Drinkers," Woods Hutchinson, New York, Chairman.

"To Prepare a Draft of an Act to Create a State Board of Medical Examiners," Charles McIntire, Easton, Pa., Chairman.

The symposium for the year is on "The Place of Woman in the Modern Business World, as Affecting Home Life, through Marital Relation, Health, Morality and the Future of the Race."

Under this the following papers are promised:

1. "As Affecting the Home-Life and the Marital Relations," A. Stewart Lobinger, Los Angeles.
2. "As Affecting Health," L. Duncan Bulkley, New York.
3. To be announced, Otto Juettner, Cincinnati.
4. To be announced, Norman Bridge, Los Angeles.
5. To be announced, Edward B. Heckel, Pittsburg.
6. "The Invasion of Masculine Pursuits by Women—A Statistic Study," A. L. Benedict, Buffalo.
7. "The Influence of Modern Methods of Education upon Women, Their Home-Life, etc.," George H. Hoxie, Kansas City, Mo.

A paper on "Some Considerations of the Necessity for a Rational Curriculum for the Doctorate," by Henry Beates, Jr., of Philadelphia.

Physicians who have completed an academic or scientific course in a college in addition to the medical course are eligible to membership in the Academy.

Meeting of the Association of American Teachers of the Diseases of Children. This Association will hold its annual meting in Chicago at the Great Northern Hotel, corner of Jackson Boulevard and Dearborn, on June 1.

Requirements for membership in this Association are somewhat unique. To be eligible one must be a regular physician resident in the United States, Canada or Mexico, who is in good professional standing and membership in his county or local medical society and actively engaged as Professor or Associate Professor or Clinical Professor of Pediatrics, or as adjunct to such a chair, or who holds the position of Lecturer on this branch or an equivalent position in a recognized medical college, or who is a member of a properly organized hospital or dispensary staff actively engaged in the treatment of children. All such are invited to join the Association; and all physicians and surgeons interested in children are invited to attend the meeting. Its objects are the study, the teaching and the practice of pediatrics.

The officers of the Association are as follows:

President. Samuel W. Kelley, Professor of Diseases of Children in Cleveland College of Physicians and Surgeons, Medical Department of Ohio Wesleyan University.

Vice-President, Chas. Douglas, Professor of Diseases of Children in Detroit College of Medicine.

Secretary, John C. Cook, Professor of Diseases of Children in Post-Graduate Medical School and Hospital of Chicago (deceased).

Secretary pro tem., Robert A. Black, Chicago.

Treasurer, George G. Cattermole, Professor of Diseases of Children in Colorado School of Medicine.

Senators, W. C. Hollopeter, Professor of Diseases of Children in Medico-Chirurgical College of Philadelphia; H. M. McClanahan, Professor of Diseases of Children Medical Department of the University of Nebraska, Omaha; F. R. Gilbert, Professor of Diseases of Children Kentucky Medical College, Louisville, Ky.

The program in part is here presented:

Address of Welcome, Arthur D. Bevan, Chicago.

Address of the President, Samuel W. Kelley, Cleveland, Ohio.

"The Teaching of Pediatrics as Seen by an Inspector of Medical Colleges," Frederick C. Zapffe, Chicago, Ill.

"The Fallacy of Attempting to Teach Pediatrics in the Chair of Practice," John A. Witherspoon, Nashville, Tenn.

"The Teaching of Pediatrics in the European Schools," H. E. McClanahan, Omaha, Neb.

"The Teaching of Pediatrics in the Medico-Chirurgical College of Philadelphia," W. C. Hollopeter, Philadelphia, Pa.

"The Doctrine of Difficult Dentition," Theodore J. Elterich, Pittsburg, Pa.

"Anatomical Peculiarities of Infants and Children," Richard B. Gilbert, Louisville, Ky.

"Unciniariasis in the Southern States," J. Ross Snyder, M. D., Birmingham, Ala.

Paper, Wm. W. Butterworth, New Orleans.

"Some Points on Infants' Clothing," Alfred C. Cotton, Chicago, Ill.

Papers by Robert A. Black, Chicago, Ill., Wm. J. Butler, Chicago, Ill., and J. W. Van Derslice, Chicago, Ill.

Deaths

C. T. Grover, of Orwell, died recently.

Katherine Burns, of Canton, O., died March 23.

Otho Evans, of Franklin, O., died April 12, aged 75.

Chas. F. Mayers, of Tiffin, O., died April 12, aged 38.

Alexander A. Crump, died at Millersburg, O., aged 88.

S. R. Walker, aged 40, died suddenly at Aurora, O., April 19.

Orla I. Corson, of Mount Sterling, O., died March 20, aged 37.

Chas. L. Tilton, of North Baltimore, O., died March 26, aged 42.

Willis L. Snyder, formerly of Urbana, O., died April 2, aged 39.

J. G. Bigham, of Millersburg, O., died March 14, at the age of 73.

Samuel R. Hayes, of Tippecanoe City, O., died March 16, aged 45.

Frank P. Moore, of Lisbon, O., died in San Antonio, Texas, April 14.

V. H. Gibson, of Upper Sandusky, died from apoplexy, early in April.

Wm. E. Warner, a retired physician of this city, died April 17, aged 79 years.

O. F. Prochaska, 3323 East 55th St., Cleveland, died March 29, aged 39 years.

C. A. Force, of Attica, O., aged 49, died March 23, after undergoing an operation.

Howard S. Straight, a well known specialist of this city, aged 50, died in New York City, April 14, while returning home from abroad.

Charles J. Aldrich, Professor of Nervous and Mental Diseases in the Cleveland College of Physicians and Surgeons, and one of the leading physicians of this city, aged 47, died April 19 at Lakeside Hospital, after a prolonged illness.

The Cleveland Medical Journal

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Essential Hemorrhage of the Kidney

By F. E. BUNTS, Cleveland, Ohio

In October, 1904, a patient was referred to me for operation for supposed stone in the right kidney. She brought with her a radiograph which, her physician said, showed distinctly the stones in the kidney.

She was 48 years of age. Her father died of typhoid fever; her mother and one brother were living and well; three brothers were dead, one of epilepsy, one of cancer, and the other of septicemia. No history of tuberculosis in any member of the family could be obtained. Patient had had the usual diseases of childhood, and stated that she had had three attacks of typhoid at 11, 20 and 30 years, respectively. She had had tonsillitis frequently and had an attack of enteritis three years previously. She had had a pain in her right side for four years, not constant but recurring at varying intervals, but since January, 1904, it had been almost constant. In March, 1904, she first noticed blood in the urine, and it had been nearly constantly present though varying much in quantity, at times rendering the urine very dark in color; occasionally she had pain on urination. Aside from this trouble the patient was in very good physical condition, appetite good, bowels regular, and she was gaining in weight.

Urinary examination before operation: Acid reaction; sp. gr. 1029; a trace of albumin; no sugar; a few granular casts; red blood-cells, epithelium and leukocytes.

Ureteral catheterization and report by W. E. Lower:

Read before the Academy of Medicine of Cleveland, April 17, 1908

Amount obtained from each kidney, 6 cc. Color: Right clear amber, left bloody. Freezing point: Right 89, left 105. Reaction: Right very slightly acid, left acid. Albumin: Faint trace right, present left. Microscopic findings: Right, ureteral epithelium, few leukocytes; left, red blood-cells.

Although the subjective symptoms seemed to point to the right kidney, the ureteral examination was so positive in its result that it was decided to operate upon the left kidney on the assumption that there was either a stone or possibly a polyp in the pelvis of the kidney.

An observation of the radiograph which she brought me showed that the supposed stones in the right kidney were really shadows from the vertebrae in the kidney region.

At the operation I could not discover any stone or growth by palpation. The kidney was somewhat larger than normal, otherwise natural in appearance, with the exception of a central zone which was dark colored as though the site of a venous congestion. The kidney was split from pole to pole and down to the pelvis but no stone or growth could be found and no macroscopic evidence of disease, except the central congestion, could be found. The kidney was sutured with No. 2 chromic catgut mattress sutures and the wound in the loin was closed with a gauze drain. Immediately following the operation there was a large amount of blood present in the urine but at the time of her discharge, November 20, there was no macroscopic evidence of blood, and microscopic examination showed only a few blood-cells. The pain had disappeared.

I saw the patient again on September 18, 1905, at which time there was no blood in the urine. There was general improvement in her physical condition, with a decided increase in weight.

This case, which no doubt might be classed under the vague title of essential hemorrhage from the kidney, was the first one in which I had an opportunity to cut down upon and examine the kidney. Having done so and having found nothing, and having seen the subjective as well as the objective symptoms disappear after an operation which had no definite aim except to establish the fact that there was no stone or tumor, suggested the desirability of reviewing the literature of essential hemorrhage of the kidney to see whether there was anything definitely determined regarding its pathology and treatment. The literature is rather voluminous and the opinions widely different.

Boursier, writing in 1900, thinks that this hemorrhage may be the only symptom of renal lithiasis, stating that in some cases the determining cause was uric acid crystals and in others oxalate of calcium crystals. These crystals are so frequently present in urine that it would seem quite as much a coincidence as a cause.

Albarran draws attention to the excessive hemorrhage which may come from limited tuberculosis and small neoplasms in the cortex of the kidney, and to what seems to be of particularly important significance, the fact that in certain conditions of the kidneys the least lesion of nephritis is capable of determining the vascular or angioneurotic modification capable of leading to bleeding. He mentions the frequently observed abundant hemorrhages following cutting a kidney in which nephritis is present.

Fenwick reports two cases which he thinks demonstrate the reality and power of nerve control over the renal blood-supply, and draws attention to the extremely small source from which an uncontrollable hemorrhage may come.

Elterich reports a case of hematuria which was paroxysmal in character and seemed to occur most frequently after some mental excitement.

Schenck, in reporting a case of renal hematuria of unexplained origin, adopts the view of Israel and of Rovsing, that there is an undiscovered cause of the bleeding, rather than that the bleeding comes from an anatomically sound kidney.

Guthrie relates 12 cases of hematuria occurring in closely related persons, but thinks this form is hereditary and distinct from the essential renal hematuria of Debairieux.

Schede thinks that the nervous theory of this form of hematuria is tenable in part, but doubts Israel's conclusion, that there is no such thing as bleeding from anatomically unaltered kidneys.

Wulff examined microscopically a section from a kidney which had been bleeding. From the presence of blood corpuscles between the tuft and the wall in the glomeruli, the spaces being larger than normal between tuft and wall, he thought it pointed more clearly to an essential origin than in any other cases reviewed, for not only were there no evidences of nephritis, unless the presence of hyaline casts in the straight tubules be taken as such, none being found in the urine, but the red corpuscles were in such situations as to preclude in all possibility that the bleeding could be due to rupture of the blood-vessels. If they had been found in only one glomerular space this might have been probable, but as they were found in many it is not probable.

Regnes sums up his review of the subject by saying, "*A* *priori* one can say that there is no essential hematuria; its existence would be contrary to all the laws of general pathology. It is necessary to believe that there is in reality a cause, but that the present condition of our scientific methods of investigation does not permit us to discern it."

Schuller analyzes the cause of renal hematuria of apparently essential origin in cases recorded by different men as follows:

1. Congenital abnormalities. Large vascular cord diagonally across the renal pelvis. When the pelvis became full the cord became kinked and circulation was obstructed with resulting hematuria (Rovsing).

2. Diffuse bilateral nephritis (Israel, Rovsing).

3. Diffuse or partial (circumscribed) unilateral nephritis. (Israel and Rovsing, four cases each; Pousson and Senator, and Poirier and Oliver, two cases each; Forsell, Salbatier, Tuffier, one case each.)

4. Glomerulonephritis (Hofbauer, Péan, Desmous).

5. Extreme fibrous degeneration of the fatty capsule, dense thickening of the capsule propria, which showed inflammatory processes and circulatory disturbances (Israel, six cases; Rovsing, two).

6. Mechanical lesions and their consequences (chronic nephritis from compression). A typical case of "Schnürniere" (kidney compressed by lacing?). A case of torsion of the kidney "pedicle" behind an adherent lobe of the liver (Rovsing, both cases).

7. Sandy incrustation of a papilla (Abbé).

It is not known why we find diffuse nephritis with severe hemorrhage on one hand, and a much more severe grade of diffuse nephritis and no hemorrhage on the other, nor why, with contracted kidney, severe bleeding should occur.

In Schuller's own case, in which there was no apparent cause for hematuria of renal origin, the microscopic examination of a portion of the kidney removed showed the presence of parenchymatous nephritis. He thinks that in "essential" renal hematuria the bleeding is entirely due to mechanical causes.

I have collected from the literature of this subject 70 cases and have attempted to analyze them from various standpoints.

1. *Sex:* I find that there are recorded 30 males and 37 females, suggestive at least that occupation and exposure were not predisposing factors.

2. *Age:* This varies from five years to 65 years, and the

average age of all the collected cases is 35 2/3, showing a decided predilection for young adult and middle age.

3. *Kidney Affected:* In 55 cases only was this stated and of these 32 were right and 23 left. Rather a marked preponderance in favor of the right kidney. And in no case was it recorded that both kidneys were affected.

4. *Urinary Sypmtoms:* The presence of albumin was noticed in but 19 cases, and in several of these it was mentioned that it was present only in amount proportionate to the red cells present.

Casts were reported in only 10 cases. These casts were variously of the epithelial, granular, blood and hyaline variety, evidently not very suggestive of a common origin.

It was specifically stated in 15 cases that no tubercle bacilli were present.

5. *Pain:* This was present in but 36 of these cases, painful, frequent micturition and vesical tenesmus with the passage of greater or less amounts of blood and blood-clots being most frequently complained of.

6. *Duration of Hemorrhage:* This ranged from 14 days to 12 years, the average being 20 months.

7. *Clinical Diagnosis:* In only a relatively small number was a pre-operative diagnosis made. In 13 it was supposed to be calculus, in 12 tumor, and in five tuberculosis of the kidney. In only one was nephritis suggested.

8. *Operative Procedure:* Nephrotomy was performed with or without decapsulation in 38 cases, with a secondary nephrectomy in three cases. Primary nephrectomy in 12 cases. Needling for stone in two cases. In two cases the bladder was opened primarily on the supposition that the hemorrhage was from the bladder. Nephrorrhaphy was performed in three cases.

9. *Operative Findings:* In 18 cases the kidney was reported as apparently normal. In 11 cases nephritis was present. In the remaining cases the kidney was reported variously as friable and anemic; 1/6 natural size, dense and tough; hemorrhagic infarction in lower 1/3; dark chocolate color throughout; intensely purple, soft and degenerated; small cysts in pelvis of kidney; uneven on surface, lengthened and flattened, parenchyma thickened irregularly, pieces of false membrane in renal pelvis; congested; adherent in upper third, which was bluish red inside and out; displaced downward, cyanotic, venous and capillary stasis in straight tubes (two cases); diffuse myxangiomatous

condition of pelvis, kidney tissue only slightly changed; tuft of vessels surrounding apex of papilla (two cases); enlarged and congested; sclerosis; pyramid capped with slight sandy layer; tuberculosis of summit of papilla with eroded arteriole; hydatid cyst and small islet of sclerosis.

10. *Operative Mortality:* Fifty cases were reported as cured; four died. Of these four cases, one lived two months, one died of uremia in 15 days, and of the remaining cases no mention of the cause of death is made.

11. *Recurrence of Hemorrhage:* The length of time during which the patient was under observation after the operation ranged from two weeks to seven years and no recurrence was reported in 41. In only two was the hemorrhage continuous, and in a few a return of the hemorrhage occurred one, one and one-half, two and three years after the operation.

In presenting these statistics I have endeavored to rule out cases in which the actual cause of hemorrhage, such as malignant growths, tuberculosis, calculus, nephritis, and papilloma, was accurately made out before operation, and it will be observed that while in the cases selected calculus was diagnosed in 13 cases, it was not found in one. In 12 cases supposed to be tumors of the kidney none were found. In five cases tuberculosis was diagnosed but operation revealed it but once. In only one was nephritis diagnosed before operation, while operation proved that at least 11 cases had nephritis. It must be said in this connection that relatively few of the kidneys were subjected to microscopic examination, chiefly those in which nephrectomy was performed.

Many of these cases were reported before the more modern assistance of the cystoscope, ureteral catheterization and X-ray photography had been called into general use, and yet it must be obvious that even with these aids in all the cases reported the only assistance would have been the determination of which kidney was the subject of hemorrhage. It is evident, too, that the possibility of unilateral hemorrhage in nephritis was overlooked or regarded improbable in all the cases but one.

The low mortality following operation and the large percentage of clinical recoveries, whether the operation were nephrotomy, nephrectomy, or decapsulation and fixation, are very striking, and in the absence of positive indications for more radical operation would suggest the employment of nephrotomy or fixation with decapsulation as being preferable to nephrectomy.

Modern methods of collecting the urine from each kidney and careful microscopic examination should in most cases remove from this group of cases tuberculous kidneys. The X-ray may be relied upon to eliminate another large group of renal calculus cases, but we shall still have left a considerable number of inflammatory and a variety of other, as yet undemonstrable, cases of hemorrhage, which will remain undiagnosed prior to operation.

The operative results both as to recovery and non-recurrence of hemorrhage seem to me to be so strikingly beneficial as to establish the value of operative procedures in these cases, for the long average duration of hemorrhage, 20 months, makes it improbable that the recovery was a coincidence and not a result of the operation.

I must apologize to this society for bringing before them a paper so largely composed of dry statistics, but I wished to draw attention to the following facts:

1. The cause of hemorrhage from the kidney cannot be diagnosed by present methods in a large number of cases.

2. It is probable that there is in most cases a distinct lesion, though the absence of sufficient microscopic examinations of the exposed kidney leaves this, as yet, undetermined.

3. Nephritis is as yet the most frequently demonstrated cause of unilateral hemorrhage in this class of cases.

4. Operation promises a cure in most cases.

And, finally, the chief object of this paper is to emphasize the importance of removing at operation, at least a sufficient amount of the kidney to permit of careful microscopic examination.

In this way only can we probably eliminate the large number of kidneys which have heretofore been reported as normal, and at the same time relegate to its proper oblivion the misleading name of essential hemorrhage of the kidney.

No.	Reporter	Sex	Age	Pain	Anemia	Urinary Symptoms	Duration of Hemorrhage	Albumin in Urine
1	Harris, M. L.	M.	51	0		0	3 months.	Small amount.
2	Taylor, A. D.	M.	50	0	Yes.	0	3 years.	Small amount.
3	Salbatier.	F.	30	Yes.		Uremia. First attack.	7 years.	
4	Schede.	M.	50	Yes.	Yes.	0	4 weeks.	
5	Anderson.	F.	24	Yes.			4 years.	
6	Durham.	F.	43	Yes.				
7	Legnen, F.	M.	26	Yes.				
8	Broca, A.	F.	28	Yes.		Micturition frequent.	16 months.	
9	Passet.	F.			Yes.	Hemorrhage began with menstruation.		
10	Israel, J.	F.	52					
11	Senator, H.	F.	19	0	Yes.	Slight increase in micturition. Hemorrhage followed menstruation.	2¼ years.	
12	Oliver, T.	M.		Yes.				
13	Oliver.	M.	54		Yes.			
14	Klemperer.	M.	22					
15	Klemperer.	M.	37	0		0		
16	Stavely, A. L.	F.	36				1 year.	
17	Elterich, T. J.	M.	8	0		0	3 years.	"Some."
18	Elterich, T. J.	M.	5			0	10 weeks.	

No.	Casts, etc.	Which Kidney	Clinical Diagnosis	Surgical Treatment	Condition of Kidney	Recurrence of Hemorrhage	Result
1	0			0		None in 2½ years.	Cure.
2	0	Left.		Nephrotomy.	Apparently normal.	None in 6 months.	Cure.
3		Right.	Calculus.	Nephrectomy.	Normal.	None in 2 years.	Recovery.
4	White corpuscles, ciliated epith.	Left	Calculus, tuberculosis or beginning neoplasm.	Nephrectomy.	Friable and anemic.	None.	Recovery.
5		Right.	Calculus.	?	Apparently normal.	?	Recovery.
			Calculus.	Nephrotomy, 2 years later nephrectomy.	Normal.	Yes.	Death.
7				Kidney cut down on and capsule split.	Normal.		Death in 2 months
8	Epithelial and granular. Crystals.	Right.	Beginning tuberculosis or neoplasm.	Kidney cut down on and capsule removed.	Normal.	None in 3 years.	Recovery.
9		Right.		Bladder opened, negative. Kidney cut down on.		Slight after 2 years.	Recovery.
10	Renal epithelium.	Left.	Small tumor.	Nephrotomy.	Normal.	None in 1 year.	Recovery.
11		Right.		Nephrectomy.	Slight interstitial nephritis.	None.	Recovery.
12		Left.	Calculus.	Nephrotomy.	Normal autopsy findings macroscopic. Microscopic: beginning interstitial nephritis with fatty degeneration.		Death.
13			Calculus.	Kidney exposed and needled for stone.	⅙ natural size, dense, tough.	None in 7 years.	Recovery.
14		Left.		Nephrectomy.	Normal.	None.	Recovery.
15				0		None in 5 months.	Recovery.
16	No casts, Large, flat, epithelial cells.	Left.		Exp. nephrotomy.	Normal macroscopic.	None in 2 weeks.	Recovery.
17	Few blood.						
18	No casts. Squamous epith. cells. Mucus.						

No.	Reporter	Sex	Age	Pain	Anemia	Urinary Symptoms	Duration of Hemorrhage	Albumin in Urine
19	Newman, D.	M.	52	Yes.	Yes.	Pain in urethra and bladder on micturition 1 day only. Frequent micturition.	5 months.	Small amount.
20	Newman, D.	M.	29	Sl't.		Discomfort and dragging sensation in left side.	4 months.	
21	Newman, D.	M.	65	0	Slight.	Frequent micturition.	2 months.	"Fairly copious."
22	Guthrie, L. G.	M.	6	0	0	Frequent micturition. Enuresis.		1½ average content.
23	Guthrie, L. G.	F.	15		Slight.		3 years.	1/10 to 1/20 average content.
24	Schenck, B. R.	F.	46	Yes.	Slight; 65% hemoglobin.	0	5 months.	Considerable
25	MacGowan, G.	M.	35	Yes.	Yes.	Two months previously chills, temperature, dysuria and frequency of micturition	2 months.	?
26	Eshner, A. A.,	F.	20	Yes.	0	Urine red during exacerbations of pain. Urinating relieved pain. Exacerbations lasted 10 days to two weeks.	12 years.	Considerable
27	Lavenstein, C.	M.	47	Yes.		Profuse hematuria.	12 years.	
28	Picque, L. & Rebland.	F	39	Yes.	Yes.		4 months.	
29	Picque & Rebland	F.	39	Yes.			18 months	

No.	Casts, etc.	Which Kidney	Clinical Diagnosis	Surgical Treatment	Condition of Kidney	Recurrence of Hemorrhage	Result
19	0	Left.		Exp. incision. Kidney rotated. Sutured.	Hemorrhagic infarction in lower ⅓.	Occasionally for 3 weeks after operation. Then none for 11 weeks.	Recovery.
20	0	Right.		Nephrorrhaphy, kidney freely movable. Sutured.	Dark chocolate color throughout.	0	Recovery.
21	0	Left.				Occasionally at first. None after 2½ months.	Recovery.
22	Blood casts. No hyaline. Few uric acid or oxalate crystals.	?				Hemorrhage continues.	
23	Blood casts. No hyaline or true granular. No crystals.	?				Hemorrhage continues.	
24	No casts. Epithelial cells.	Left.		Nephrotomy.	Macroscopically and microscopically normal.	Blood in urine for 3 weeks. None for 2 years.	Recovery.
25	Pus.	Right.		1. Section alta of Bladder. 11. Nephrectomy.	Macroscopically, intensely purple; bled profusely on section, soft and degenerated. Microscopically, not sufficient change to account for hemorrhage.		Recovery.
26	No pus. Moderate amount of epith. cells and many calc. oxalate crystals.	Right.	Calculus.	Kidney exposed, not incised.	Nothing abnormal found.		Recovery.
27	Crystals of lime salts.	Right.		Kidney exposed and pelvis punctured in 3 places.	Nothing abnormal found.	None.	Recovery.
28		Left.	Malignant disease.	Capsule removed; large cyst at inferior pole. Cyst evacuated and wall excised. Kidney incised.	Kidney appeared normal on incision. No microscopic examination.	3 years after operation.	Recovery.
29	Epithelial cells; no tubercle bacilli.	Right.	Neoplasm.	Kidney exposed; adhesions freed.	Nothing abnormal except kidney strongly adherent at upper end.	None.	Recovery.

No.	Reporter	Sex	Age	Pain	Anemia	Urinary Symptoms	Duration of Hemorrhage	Albumin in Urine
30	Guyon, F.	M.	26				19 months.	
31	Guyon, F.	F.	35	Yes				
32	De Keersmaecker.	F.	43			Painful micturition for many years.	2 years.	
33	Debaireaux.	F.	20	Yes.			6 months.	Yes.
34	Genonville.	M.	51	Yes.			1 year.	
35	Loumesurg.	F.	32	Yes.			7 months.	
36	Debersaques.	M.	38	Yes.				None between attacks.
37	Poirier.	F.	48	Yes.			3 months.	Considerable
38	Rovsing, T.	F.	21	Yes.				
39	Rovsing.	F.	56		Yes.			
40	Rovsing.	M.	47	Yes.			3 months.	
41	Rovsing.	F.	28	Yes		Severe exacerbations of pain accompanied with vesical tenesmus and hematuria.	3 months.	

No.	Casts, etc.	Which Kidney	Clinical Diagnosis	Surgical Treatment	Condition of Kidney	Recurrence of Hemorrhage	Result
30	Pus; tubercle bacilli.	Right.	Tuberculosis of right kidney.	Kidney exposed and divided.	No lesion found.		
31		Right.	Carcinoma of kidney.	Kidney exposed.	"Normal."	None.	Recovery.
32		Left.		Kidney exposed and found mobile. Removed.	Chronic nephritis.	None.	Recovery.
33	0	Left.	Calculus or neoplasm.	Kidney exposed, incised and examined.	Two translucent prominences as large as pin heads on the mucous membrane of the pelvis of the kidney.	None in 2½ years.	Recovery.
34		Right.	Calculus or neoplasm.	Nephrotomy.	Uneven on surface, lengthened and flattened. Parenchyma thickened irregularly. Pieces of false membrane in renal pelvis.		
35	No tubercle bacilli.	Left.		Nephrotomy.	Congested; no apparent lesion.	None in 4 months.	Recovery.
36	0	Left.		Nephrotomy.	Congested.	None.	Recovery.
37		Right.	Calculus.	Nephrectomy.	Normal in size, lobulated and granular. Microscopically, chronic nephritis.	None.	Recovery.
38	No tubercle bacilli.	Right.		Nephrotomy. Portion removed. Adhesions freed.	Adherent in upper ⅓ which was bluish red inside and out.	None in 18 months.	Recovery.
39	Colon bacilli.	Right.		Nephrotomy. Portion removed.	Displaced downward obliquely, cyanotic. Microscopically, venous and capillary stasis and colon bacilli in straight tubes.		Recovery.
40	No tubercle bacilli or crystals.	Left.	Tumor or tuberculosis.	Nephrotomy.	High location. Apparently normal.	None.	Recovery.
41	Epithelial cells and bacteria, coli communis.	Left.	Calculus.	Nephrotomy.	Displaced downward, pelvis dilated, kink in ureter. Microscopically, normal. Colon bacilli in straight tubules.		

No.	Reporter	Sex	Age	Pain	Anemia	Urinary Symptoms	Duration of Hemorrhage	Albumin in Urine
42	Myles, T.	F.	26	Yes.	Yes.	Urine almost pure blood.		
43	Fenwick, E. H.	F.	18	0	Yes.		5 years.	
44	Fenwick.	F.	30	0			14 days.	
45	Albarran, J.	M.	53	Yes.		Hematuria came on with an exacerbation of pain. Previously red cells associated with albumin.		Small Amount.
46	Loumeaux.	F.	34	0	Yes.	0	4 months.	
47	Pasteau, O.	F.	44	Yes.				
48	Cabot, A. T.	F.	43					
49	Jalland, W. J.	M.	30	Yes.				
50	Newton, R. E.	F.		Yes.		Frequency of micturition.		
51	Chetwood, C. H.	M.	40			Increased frequency of micturition.		
52	Dorean, P.	F.	24	0		0	2 months.	

No.	Casts, etc.	Which Kidney	Clinical Diagnosis	Surgical Treatment	Condition of Kidney	Recurrence of Hemorrhage	Result
42	No tubercle bacilli.	Left.		Nephrotomy. Nephrectomy 23 days later.	Enlarged, congested and lobulated. Microscopically, diffuse myxangiomatous condition of pelvis. Kidney tissue only slightly changed.	Recurred after first operation. None after second.	
43	No tubercle bacilli or cells from pelvis.	Left.		Exposed and pelvis opened. Tuft of vessels removed.	Tuft of vessels seen surrounding apex of one papilla.	Slight relapse 18 months after.	Recovery.
44	No tubercle bacilli.	Left.		Exposed and pelvis opened. Varicose papilla removed.	Bright red varicose papilla.	None.	Recovery.
45		Right.	Nephritis.	Exposed and divided; nodule removed.	Macroscopically, kidney much enlarged, congested and adherent. Nodule contained lesion of chronic nephritis.	None.	Recovery.
46	No tubercle bacilli.	Left.	Primary tuberculosis.	Nephrectomy.	Kidney enlarged. Microscopically, chronic nephritis.	None.	Death from uremia 15 days later.
47		Right.		Kidney exposed and sutured in place.		None.	Recovery.
48		Right.		Kidney exposed and sutured in place.		None.	Recovery.
49	Small fragments of uric acid calculi.	Right.		Kidney exposed and punctured.		None.	Recovery.
50	Pus cells. No tubercle bacilli or crystals.	Right.	Calculus.	Kidney exposed, incised and explored.	Kidney enlarged and congested.	None.	Recovery.
51	No tubercle bacilli.	Right.	Calculus.	Kidney exposed, divided and piece removed.	Small indurated area near anterior surface. Microscopically, chronic parenchymatous nephritis.		
52	No tubercle bacilli. Urea 16.5 gr.	Left.		Kidney exposed, incised and removed.	Macroscopically, looked like a dead leaf in color, easily decorticated, and red cicatrices on surface. Microscopically, sclerosis found.	None.	Recovery.

No.	Reporter	Sex	Age	Pain	Anemia	Urinary Symptoms	Duration of Hemorrhage	Albumin in Urine
53	Abbe, R.	M.					2 years.	
54	Routier.							
55	Protherat.	F.	33	0	Yes.		4 years.	"In notable proportion."
56	Protherat.	F.	52		Yes.		18 months	Appreciable amount.
57	Pousson.	F.	23	Yes.	Yes.	Slight pain on micturition and frequency for 4 years. Tenesmus on passing clots of blood.	3 months.	Small amount.
58	Hamonic, P.			Yes.			1 month.	Trace.
59	Castin.	F.	48	Yes.		Micturition painful.	2 months.	0
60	Tedenat.	M.	32			Colicky pain until clot expelled.	4 years.	
61	Poljakoff.	F.	25	Yes.				
62	Wulff.	M.	46	Yes.			8 months.	Amount in proportion to red cells.
63	Schuller, H.	F.	49		Yes.		10 months	Amount in proportion to red cells
64	Naunyn.	F.	30					0
65	Naunyn.	M.	50				3 years.	

No.	Casts, etc.	Which Kidney	Clinical Diagnosis	Surgical Treatment	Condition of Kidney	Recurrence of Hemorrhage	Result
53		Right.		Kidney punctured, incised and pelvis explored.	Pyramid capped with light sandy layer.		
54		Right.		Nephrectomy.	Hard point seen. Microscopically, summit of papilla tuberculous with eroded arteriole.	None.	Recovery.
55		Right.		Incision not made as hematuria suddenly ceased.			
56		Right.	Neoplasm.	Nephrectomy.	Macroscopically, three or four times normal size. Microscopically, interstitial nephritis.		
57	Casts. No tubercle bacilli.	Right.	Tuberculosis (renal).	Nephrectomy.	Parenchyma ecchymotic in places and in others anemic. Microscopically, congestion marked, nephritis.		
58		Right.		Nephrotomy.	Normal macroscopic.	None.	Recovery.
59	Phosphate crystals; no tubercle bacilli.	Right.	Renal tuberculosis.	0		None.	Recovery.
60			Neoplasm.	Nephrotomy.	Hydatid cyst. Small islet of sclerosis.	None in 7 years.	Recovery.
61	0		Angioneurotic renal hematuria	0			
62	0	Right.	Renal tumor.	Nephrotomy. Later nephrectomy.	Macroscopically, normal. Microscopically, normal as to nephritis. Numerous red cells in glomerular spaces. Hyaline casts in straight tubules.		
63	No tubercle bacilli.	Right.		Kidney incised and pieces of papilla and cortex removed.	Parenchymatous nephritis.	None (after 1 month) in 1 year.	Recovery.
64				Belt for movable kidney.			Cure.
65	Few hyaline casts.	Right.	Renal tumor.	Nephrotomy.	Normal.		

No.	Reporter	Sex	Age	Pain	Anemia	Urinary Symptoms	Duration of Hemorrhage	Albumin in Urine
66	Naunyn.	M.	40	0	Yes.	"Terrific" hematuria; no clots; lasted 5 weeks.		
67	Naunyn.	M.	44	Yes.		Many attacks of hematuria.		
68	Naunyn.	M.	35	Yes.		Hematuria after catching cold.		Yes.
69	Hofbauer.	F.	13	0	Yes.		4 years.	
70	Demons.	F.	24		Yes.		Few weeks	0

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Some Practical Points in the Treatment of a Few Diseases of the Ear

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Most of the statements in the following paper are probably familiar to you all. I hope, however, that a brief review of the subject of diseases of the ear may refresh your memory in regard to some things which perhaps have been forgotten and possibly bring out some new points.

Anatomically, it is well to remember that the auditory canal in young children is proportionately much shorter than in the adult, and as a consequence of this the drum membrane is nearer the surface and is more liable to be injured in cleaning or even examining the ear.

The anterior inferior wall of the auditory canal is directly over the parotid gland and an abscess of this gland may rupture into the canal. The posterior wall of the bony canal forms the anterior wall of the mastoid cells and in inflammatory diseases

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No.	Casts, etc.	Which Kidney	Clinical Diagnosis	Surgical Treatment	Condition of Kidney	Recurrence of Hemorrhage	Result
66	Yes.		Renal tumor.				
67	0						
68	Casts.						
69	No tubercle bacilli.	Left.		Nephrectomy.	Macroscopically, normal. Microscopically, glomuronephritis.	0	Recovery.
70	0	Left.		Nephrectomy.	Glomerulo-nephritis (Sclerosis.)	0	Recovery.

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of the middle ear bulging of the membranous lining of this part of the canal is a very positive symptom of infection in the mastoid cells.

The External Ear. Normally the wax secreted by the glands in the external auditory canal is pushed outward and is easily removed by the finger. In some people, however, the wax slowly accumulates and will eventually plug up the canal completely. If such a condition is neglected, the wax frequently becomes hard and very tightly packed in the canal and its removal is sometimes quite difficult. The best method of removing such an accumulation of wax is gently syringing with sterile water. If a reasonable amount of syringing does not remove the wax, it should be softened by the frequent instillation of a few drops of sterile bicarbonate of soda solution and then syringed again, repeating the whole operation several times if necessary. No positive statements should be made in regard to the hearing until all the wax has been removed and the ear examined, for of course no one can tell what conditions may exist beyond the wax. Sometimes there is a perforation in the drum membrane and on account of this possibility the solutions used in the ear should be sterile.

Foreign bodies in the ear are naturally divided into two classes, animate and inanimate. Animate foreign bodies, such as flies, bugs and insects, should be killed first by pouring into the canal some heavy oil, which limits their motion and cuts off their air supply, and then removed by syringing with water. The use of oil in such cases is the only time when one is justified in putting oil in the ear. Dropping warm oil in the canal to relieve earache is a practice open to criticism for it does not give any more relief than clean warm water and it adheres to the canal wall and becomes rancid and increases the chances of infection of the middle ear.

Inanimate bodies which do not absorb moisture, such as pebbles and buttons, may be removed by syringing, or sometimes simply by turning the head and affected ear downward, straightening the canal by pulling the ear upward and backward and allowing the foreign body to fall out by gravity.

Foreign bodies which absorb moisture and swell, or bodies which have been impacted in the canal by unsuccessful attempts at removal, should be removed with instruments. One of the best instruments for such cases is a slender right-angled hook with a blunt point. The patient should be absolutely under control, and for this reason a general anesthetic should be given. A good light and a head mirror are also needed. The hook, with the flat side toward the wall of the auditory canal, should be carefully passed beyond the foreign body and then turned so as to hook down behind it and, by gentle traction, remove it.

Sometimes the sensation caused by a foreign body persists even after the body has dropped out but it goes without saying that no attempt at removing a foreign body should be made until the canal has been examined and the body located. Inanimate foreign bodies, if undisturbed, may remain in the canal some time, without doing any damage, so that the physician should always take sufficient time to make all necessary preparations for their proper removal.

The Middle Ear. Whooping cough, diphtheria, influenza and the exanthematous diseases, especially measles and scarlet fever, are almost invariably accompanied by severe inflammation in the nose and nasopharynx and are thus very common causes of acute infection of the ear. Hypertrophy of the third and pharyngeal tonsils and inflammation in the nose are also frequent sources of infection. In all of these disorders the physician should be constantly on the alert for any indication of infection in the ear and promptly begin the proper treatment, if such an infection occurs, for the infection almost invariably reaches the ear through the Eustachian tube.

The first symptoms are a feeling of fulness in the ear, pain and a rise of temperature. In young children, frequently the only objective symptom is the rise of temperature and it is wise, therefore, to always consider the ear as one of the possible causes of fever in children. In patients old enough to talk, their complaint of pain or fulness in the ear immediately directs the physician's attention to it.

The pain in the ear is due to the pressure of the inflammatory exudate on the drum membrane and the surrounding structures. If the pain is not quickly relieved by a cold or hot application externally, and there is fluid in the middle ear, then an incision should be made in the drum membrane. This incision relieves the pain, establishes drainage, shortens the course of the disease, and thus prevents it from becoming chronic and in most cases prevents the secondary infection of the attic, antrum, mastoid cells and the brain. Another advantage gained by an incision in the drum membrane is that the opening in the membrane heals more quickly after the discharge from the ear has ceased.

If no incision is made, the membrane is ruptured by the pressure of the secretion accumulating behind it and an irregular tear is made, the frayed edges retract and become necrotic and a round opening is left, which heals slowly, if at all.

If this discharge from the ear is serous or thin pus, the best method of cleaning the ear is to carefully dry out the canal with small pledgets of cotton wound on the end of a tooth-pick. Then swab out the canal with a pledget of cotton dipped in 50% peroxide, dry it again and put a piece of cotton in the entrance of the canal to protect it from external infection and to absorb the secretion.

If the discharge is thick and tenacious, it may be removed by gentle syringing. The canal should then be carefully dried with cotton. Frequent washing of the auditory canal tends to produce maceration of the epithelial lining so that it should not be repeated more than three or four times in 24 hours, but the canal should be dried out with small pledgets of cotton as often as is necessary to keep it reasonably clean.

Mastoid Infection. Sometimes, in spite of the most careful treatment of acute middle ear infections, the mastoid cells become involved. Such an extension of the infection is, however, much more liable to occur if the middle ear is not freely drained, for then the pressure of the purulent secretion confined in the ear tends to force the infection into the attic, antrum, mastoid cells and labyrinth.

Brain abscess and sinus thrombosis are more liable to occur when the labyrinth and mastoid are involved than in infections of the middle ear alone. All of these complications, namely, infections of the attic, the mastoid antrum and cells, the labyrinth, the brain and the sinuses, occur much more frequently in chronic than in acute middle ear suppuration. In other words, the improper treatment or neglect of acute infections of the middle ear frequently favors the development of very serious complications.

That deafness is a great misfortune is a self-evident truth. Acute infections of the middle ear seldom cause deafness. Chronic suppuration in the ear always causes some deafness. Almost every case of chronic suppuration in the ear could be avoided by the proper treatment of the acute infection and thus eliminate the cause of many cases of deafness.

Osteitis Deformans

By O. A. WEBER, M. D.

Osteitis deformans or Paget's disease of the bones was first described by Sir James Paget in 1876 after a study of five well marked cases. The disease was formerly supposed to be extremely rare, but it is much more common than ordinarily has been believed. E. E. Locke, of Boston, within a relatively short time, had 25 cases under observation. Most of our early literature upon the subject came from the English and it is only of late years that it has been known to be as prevalent in other countries as in England. Up till a few years ago only eight cases had been reported in this country. The increased number of cases reported each year seems to be due to a better knowledge of the disease, and not to its becoming more prevalent.

Etiology: The etiology of the disease is unknown. Paget considered it a chronic inflammation of the bones. Others have given syphilis, organic heart and nervous disturbances, constitutional disorders which cause atrophy of a portion of the bone and hypertrophy of other portions, as etiologic factors. Males

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Read before the Clinical and Pathological Section of the Academy of Medicine of Cleveland, May 8, 1908 and females seem to be equally affected, but the deformity is more readily noted in men than in women, because of their mode of life. The average time of onset is about 49 years, although Moizard and Bourges have reported a case beginning at the age of 21, while Silcock and Lloyd reported one beginning as late in life as 82 years. Insanity has been present in a number of these cases. The question of inheritance is doubtful, although several cases are on record showing two members of the same family affected.

Malignant growths were thought by Paget to play some part in the etiology of the disease and a number of cases showing malignant growths have been reported since, but it is generally thought that this can be explained by the time of life the disease usually becomes manifest.

Symptomology: The bones most frequently affected in the order named are: skull, tibia, femur, spine, pelvis, clavicle, ribs, radius and ulna, besides these the small bones have been involved in a small proportion of the cases. From the distribution of the bones involved it would seem that pressure and gravity had something to do with the deformities.

The disease begins insidiously and may continue for years without influence on the general health. Usually the first symptom the patient complains of is that he has to be continually getting larger hats, which shows him that his head is increasing in size. There may or may not be pain, but if present it is described as rheumatic or gouty and usually is present only at the beginning. After the disease has progressed and the deformities have appeared one sees the following picture: enlarged head which protrudes forward almost resting upon the chest; diminution in height due to the kyphosis and bending of the long bones; lozenge-shaped abdomen with a transverse sulcus running across it; broadening of pelvis with outward and forward bowing of the lower extremities. The bones of the upper extremities may also become bowed but this is not so common as in the lower extremities. Usually the arms have the appearance of being too long for the body. The temperature remains normal as do the urine and feces.

Diagnosis: If all the preceding symptoms are present the question of diagnosis is made easy, but if only one or two bones are involved other conditions must be considered. If two bones which are remote from each other are deformed, osteitis deformans is the most probable diagnosis. The differential diagnosis must be made between syphilis, acromegaly, osteomalacia, leontiasis ossium, and diffuse hypertrophy of the skull.

Syphilis may cause an enlargement of one, rarely of several bones of the body and seldom affects the skull. Syphilitic treatment in early cases of enlargement of the bones of syphilitics may cause a diminution in size of them, but in osteitis deformans it has no effect.

In acromegaly the base of the triangular cranium is below, which is just the reverse in osteitis deformans. Also the bones of the lower jaw and orbital arches are involved more than the calvarium.

Osteomalacia may present some of the same deformities but the bones are fragile and fracture often occurs, whereas in osteitis deformans fracture rarely occurs. Leontiasis ossium involves chiefly the bones of the face.

In diffuse hypertrophy of the skull there may be enlargement of the bones of the skull, but there also occurs obliteration of the hollow places of the skull, usually with exophthalmos and frequently with cerebral nerve paralysis. It also is a disease which begins in young people and not in the old.

Treatment: Drugs seem to have little or no effect on the disease. Potassium iodid and arsenic have both been recommended. As these patients are usually poorly nourished, effective feeding often gives marked relief of symptoms. For the severe pains counter-irritation is valuable. Massage is sometimes used to improve the general condition.

Pathology: Packard, Steele and Kirkbride summarize the pathology of this disease in their paper as follows: In the skull the distinction between the outer and inner table and the diploe is entirely lost. The entire thickness of the cranium is composed of finely porous bone substance, bounded on the inner and outer surface with a thin plate of harder bone. Microscopically the porous substance is seen to consist of a network of thin bony processes. The canals of the Haversian systems are enlarged and confluent, evidently the result of absorption. In the lacuna, representing the normal medullary substance, are numerous giant cells, leukocytes, and fat cells contained in a network of vascular connective tissue. Running through the affected area, and seen as well in the healthy portions of the skull, when such are present, are bands of new-formed bony tissue. The osteoblasts of this new bone, while present in considerable numbers, are not as plentiful as in healthy growing bone, and are irregularly arranged. The branching processes of the new canals are shorter than normal or are entirely lacking. The important characteristic of this attempt at regeneration is that the new substance remains uncalcified and is in time reabsorbed. The border line between the new and old bone is sharply defined, indicating that the two processes are in no way connected.

In the long bones the normal relation of compact and cancellated structure is entirely destroyed. The outer walls of hard bone are represented by thin irregular plates lying directly under the periosteum. In general the histologic picture is the same as that of the skull, except that the medullary substance is more fatty.

The following report is that of a case recently seen: the bones, which have been diagnosed as specimens of osteitis deformans, were taken from the body of a male aged 63, in the anatomical department of Western Reserve Medical College. The body came from the State Hospital for the Insane and the cause of death was stated as terminal dementia. In looking up the case I found that no history had been kept and consequently was able to learn very little of his previous history. At the time of admission into the asylum his case was diagnosed as paresis, but this was later changed to terminal dementia. One point I was able to learn was that he belonged to the cavalry in the civil war and he said that riding his horse caused his legs to become more bowed. This points to the disease having begun early in life but the statement can hardly be relied upon, because of his mental derangement.

Upon examining the body the left femur was the only bone that appeared to be diseased but when the skeleton was cleaned it was found that other parts also showed changes. Unfortunately we were unable to save the skull but nothing could be made out about the head that pointed to its being involved.

The left femur shows the most marked changes, it is bowed forward and is much thicker than normal. Just below the lesser trochanter it measures 16 cm. in circumference, which is 5 cm. greater than the right femur. The surface of the bone is much roughened and has a worm-eaten appearance. There are numerous openings for blood-vessels as well as grooves on its surface for them to run in. The angle at the neck is about a right angle and the neck and head are thickened. A large exostosis is present in the digital fossa at the insertion of the obturator externus. The bone is very much thickened but the medullary canal is about normal in size. The inner margin of the bone shows patches of condensing osteitis, which sends processes through the medullary substance, forming a network. The medullary substance is more vascular and contains more fat than normal.

The right femur shows evidence of beginning osteitis deformans although it is not marked. The most marked sign is the condensing osteitis on the medullary surface of the bone with its processes extending through the medullary substance, forming a network as in the left femur.

The right scapula is normal except for an exostosis at the attachment of the levator anguli scapulae muscle.

The pelvis has a massive appearance and its surface is much rougher than normal. The diameters are about the same as those of a female. The distance between the anterior superior spinous processes is 28 cm. while the greatest transverse diameter between the iliac crests is 32 cm.

The spine shows no abnormal curvatures. There is marked limitation of motion due to bony exostoses which resemble those of arthritis deformans. In no place, however, is there distinct bony ankylosis. From the nature of these exostoses they appear to be evidences of condensing osteitis. This condition is most marked at the junction of the dorsal, lumbar and the last lumbar vertebrae. The bodies of the vertebrae are soft and have a worm-eaten appearance. Numerous exostoses are present on different parts of the spine other than those mentioned above.

In arriving at the diagnosis of osteitis deformans the following points were taken into consideration: 1. The overgrowth of bone with the signs of rarefying and condensing osteitis. 2. Anterior bowing of the femurs. 3. Flaring of the crests of the ilia and the altered measurements of the pelvis. 4. The increased blood supply to the bones.

The Permanent Closure of Large Perforations in the Tympanic Membrane with Marked Increase in the Hearing Distance

By W. B. CHAMBERLIN

In the words of Politzer, "We doubtless owe the invention of the artificial tympanic membrane to the well known observations of aural patients, who were surprised by the startling increase in the sharpness of their hearing when, in their attempts to remove

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secretion, the remnant of the membrana tympani was touched with an ear pick or a rolled piece of paper." Thus we see that the suggestion of closing perforations artificially came, in the first instance, not from the profession but from the laity.

The use of the artificial membrana tympani is noted in literature as far back as 1640, but it remained for Toynbee in 1852 to devise the instrument which bears his name and which, with only slight modifications, is still in use. Previously however Yearsley in 1848 and Erhard in 1849 had proposed, independently of each other, the introduction of a close fitting wad of cotton into the perforation. The instrument of Toynbee is so well known as scarcely to need description. It consists of a thin, round, rubber disc through the center of which a silver wire some three cm. long is inserted in order to facilitate its introduction and withdrawal. This instrument, on account of the irritation and consequent suppuration arising from its use, is seldom recommended by the otologist. That its use is often immediately followed by brilliant results is beyond question. It is the instrument of almost universal use by the self-styled scientists whose pictures and wonderful promises of cures infest our lay literature and whose only aim is the filching of money from the pockets of an ever gullible public. The otologist is not infrequently called to remove these instruments from the ears of patients after the wire has been broken off and their own attempts at removal have failed.

The theories in regard to the part played by the artificial tympanic membrane in increasing the hearing distance are several. Possibly each contains an element of truth. Of course Toynbee's theory—that the resonance of the tympanic cavity is restored by the procedure—would hold only in cases in which the perforation was completely and tightly closed. But improvement takes place in many cases in which this is not accomplished; so it would seem that pressure upon the ossicles, especially upon the head of the stapes, whereby the foot plate is caused to fit more firmly into the oval window, also played a part. This is the explanation of Erhard, while Knapp advances the theory that the pressure of the cotton plug inward, below the axis of the hammer, throws the head of the bone outward, thereby rendering more tense the several articulations between malleus, incus and stapes. Whatever may be the scientific explanation, we know empirically that certain patients having large perforations obtain, often temporarily it must be admitted, through the use of an artificial membrane, a marked increase in their hearing distance and thereby renewed ability to again participate in the multiform pleasures of life of which they have long been deprived and whose loss can only be appreciated by those whose hearing has been partially or completely impaired.

The method which I shall describe is neither new nor startling. It is in reality only a modification of the method first suggested by Yearsley and Erhard and afterwards modified by Blake. As before mentioned the two former in 1848 and 1849, respectively, first advocated the closure of large perforations with cotton plugs, while Blake in more recent years advised the soaking of these plugs in sterile vaseline. The present method possesses the advantage that while the hearing improvement is just as great as in the previous method, the closure of the perforation is more or less permanent. The necessity of daily removal is thereby obviated and the patient is spared the danger of renewed attacks of suppuration from the accidental entrance of infected water into the ear as in bathing or swimming. As is also true of previous methods, this method is not at all applicable to those cases in which every trace of suppuration and inflammation has not disappeared, and in which we are not dealing with a perfectly dry tympanic cavity, antrum, attic and tube. Many cases too in which there is no suppuration will not be benefited. Especially is this true if there exist strong bands of fibrous tissue, firmly and inflexibly uniting the foot plate of the stapes to the margins of the oval window. In fact we cannot predict beforehand what the result in any case will be. We can only tell by trying.

After making sure that no suppuration is present and after careful orientation in regard to the shape, size and position of the perforation, the hearing is carefully tested with forks, acoumeter and voice, both conversational and whispered. The voice test if properly used is the most important, for it is the inability to distinguish conversation of which the patient complains the most bitterly, and there is often a strange disagreement between the distance for the voice as compared with that for musical sounds and noises. A sterile cotton plug slightly larger than the perforation is now formed by rolling a piece of absorbent cotton between the thumb and forefinger and this plug is inserted by means of the ordinary knee forceps well into the perforation. Little or no pain should accompany the insertion of the plug, nor should pain be present as it remains in situ, though a slight feeling of fulness is not unusual. The hearing is now again tested. Often the improvement is startling, to the patient and to the physician as well. In a recent case of bilateral perforation it was more than 100%, while in another case of unilateral perforation it was over 75%.

The patient is now cautioned in regard to keeping the ear free from water and is ordered to report daily for examination. Any sign of pain or local inflammation is an immediate signal for the removal of the plug, as pain and irritation are premonitory of the beginning of a renewed attack of suppuration. Should this occur, the ear must be treated in the usual way until all suppuration has ceased, after which the closure with cotton may again be attempted. If at the end of seven to ten days no signs of irritation are present, the hearing is again tested and the plug removed. A similar plug is now made and immersed in a warm sterile paraffin solution with a melting point of 105° to 110°. Too much paraffin should not be allowed to adhere to the plug—a point which experience will soon satisfy. This paraffin coated plug is now inserted into the perforation and the paraffin allowed to harden, thus hermetically sealing the opening. The hearing distance should be again tested and the patient kept under observation for seven to ten days; at the end of which time he may be discharged after being instructed to return at once in case of severe cold or any feeling of discomfort in the ear. Should it be found necessary to remove the plug, this may be easily accomplished by passing about its margins the warmed end of a probe, thereby melting the paraffin. After this, it may be easily withdrawn by means of the knee forceps. Such plugs may remain in the ear two or three years without causing any discomfort, though at the present time I am unable to report their use for longer periods.

The above method is not offered as a panacea for deafness; neither is it recommended, nor will it prove helpful, in all cases of perforation. In general it will prove most useful in cases in which one-fourth to one-third of the tympanic membrane still remains, in which the membrane is not bound down to the inner wall by firm adhesions and in which the perforation is situated in the posterior half. It may be tried in all cases in which we are dealing with a dry cavity. Care should be taken, however, in the promises of relief offered to patients; in the raising of false hopes often soon to be shattered.

I have seen the method tried with good success in Prof. Politzer's clinic, but as yet my own experience with it is limited.

The Ohio State Medical Association Meeting

The sixty-third annual meeting was held in Columbus, Ohio, May 6, 7 and 8. The first general meeting was in Memorial Hall, Wednesday morning, the address of welcome was given by Wells Teachnor, President of the Columbus Academy of Medicine, who addressed the Association in behalf of the local societies and the medical institutions of the city. The address of the President was then given.

The House of Delegates met on Wednesday morning, at which time the reports of the officers and standing committees were received. The Treasurer's report was especially gratifying in that the balance on January 1, 1908, was $154.00. Total receipts for the year were $7,787.97. Disbursements were $7,633.59.

The report of the Legislative Committee showed that during the past session of the State Legislature 14 desirable bills had been enacted and six undesirable bills had been defeated. No undesirable bills were enacted. The House of Delegates will create a section on Hygiene and Sanitary Science. The Association of Assistant Physicians of Ohio State Hospitals has been admitted as a section on Mental and Nervous Diseases. Brooks F. Beebe, Cincinnati, was elected Chairman, and S. P. Fetter, Gallipolis, Secretary of this section.

The election of officers for the ensuing year resulted as follows: President, D. R. Silver, Sidney; Vice-Presidents, F. F. Lawrence, Columbus; J. Eakins, Gallipolis; A. B. Walker, Canton, and H. S. Knoble, St. Mary's. Councilor, Fifth District, Clyde E. Ford, Cleveland. Councilor, Tenth District, C. D. Mills, Marysville. Member of the National Legislative Committee, B. R. McClellan, Xenia. Committee on Public Policy and Legislation, J. W. Clemmer, Columbus; G. H. Matson, Columbus, and W. H. Snyder, Toledo. Committee on Publication, C. F. Clark, Columbus, and C. S. Hamilton, Columbus.

Cincinnati was selected as the place of meeting for 1909, the date to be selected later by the Councilors of the Association.

The program presented during the meeting was of exceptional interest and broad variety. The address in medicine entitled "Some Remarks on Prognosis," was delivered by Frederick Forchheimer, Cincinnati. The address in Surgery on "Fibroid Degeneration of the Appendix," was by Robert T. Morris, New York. The address in genito-urinary surgery by Hugh H. Young, Baltimore, was on "The Present Status of the Surgery of the Prostate." The annual address before the eye, ear, nose and throat section, "The Present Status of the Radical Mastoid Operation as a Cure for Chronic Otitis Media," was given by Wendell C. Phillips, New York.

Among those from Cleveland and northern Ohio appearing on the program were: A. B. Smith, Wellington; Chas. Graefe, Sandusky; F. E. Bunts, W. E. Shackleton, J. M. Ingersoll, Royce D. Fry, A. H. Marvin, J. N. Lenker, W. B. Laffer, G. W. Crile, J. H. Lowman, C. F. Hoover, J. P. Sawyer, A. J. Skeel, R. E. Skeel, J. J. Thomas, Helen Hempstead, C. W. Stone, Myron Metzenbaum, John Phillips, A. H. Bill, D. S. Hanson, A. F. House and H. J. Gerstenberger, Cleveland.

The Cleveland Medical Journal

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EDITORIAL

Senator Hafner, of Cincinnati, and the Hospital for Crippled Children

The spectacle of one man balking the wishes of the people of Ohio, as expressed by concurrent action of both Houses of a previous legislature and by the House of Representatives of the present one, is a picture we would not willingly dwell upon, did it not so keenly relate to one of the noblest charities ever contemplated by the State of Ohio, and it is only in hopes that by calling attention to Senator Hafner's action, a just appreciation of the odium attached to it may eventually penetrate even his calloused feelings and make him realize in the future, if not in the present, the outrage he has been the means of perpetrating upon crippled, helpless yet hopeful children. This he accomplished by defeating the purpose of a bill which sought to rescue those crippled children from their cheerless dependency, and to make educated, self-respecting, self-supporting citizens.

Not all of the profession know that a Commission, of which Governor Harris was chairman, was appointed by the previous legislature to purchase a site and erect a hospital for the care and education, including trade education, of crippled children. For over ten years the State Board of Charities, physicians, and others interested in charitable institutions, have endeavored to secure the establishment of such an institution, and just as its success was assured, the plans drawn, and the site selected though not purchased, Senator Hafner by the right of might as Chairman of the Senate Finance Committee, whose heart, hardened by many a hard fought political battle, could not be touched by those appealing in the name of humanity as well as charity for those who had no votes and might never be able to go to the polls, this man defeated the will of the people of Ohio.

The Commission had decided unanimously that, as by reason of expense and prospective demands upon it there could be but one such institution, it should be located in the central part of the State, equally accessible to all. This immediately brought forth a new bill, introduced by Senator Harper, also of Cincinnati, to have two institutions, one in Cincinnati and one in Cleveland. Astonishing as it may seem, this bill passed in the Senate without a protest from Senator Hafner, Chairman of the Finance Committee, who was anxious to see the institution located in Cincinnati. This bill providing for two institutions was defeated in the House, as it properly should have been, and the House appropriated the $200,000 asked for by the Governor for the erection of one building. But when it reached the Senate Finance Committee, Senator Hafner, who had voted for the original bill for one institution and again for two institutions, for anything so he could please and satisfy his constituents in Cincinnati, who according to Senator Harper never could be comforted if the institution were placed anywhere else, this noble protector of the wealth of Ohio steeled his heart to the appeals of charity and closed his eyes to the needs of Ohio's crippled infants. Upon finding that the institution could not and would not be placed in Cincinnati, he suddenly decided that Ohio had proceeded too far in paternalism, that the State was taking too good care of its dependent classes, and that the wisest and safest blow he could strike was at these deformed and crippled children, and so he refused to permit the appropriation to go through, and the Castle in Spain built for the relief and restoration of the cripples to a new and legitimate hold upon life fell crashing to the ground.

It is over but the wreckage remains, and for years and possibly for generations to come, as long as men of the stamp of Senator Hafner of Cincinnati are in a position to dictate, the crippled, non-voting population may shift for itself.

Representation of the Profession in Legislative Bodies

The candidacy of Charles A. L. Reed, of Cincinnati, for a seat in the United States Senate should appeal to every one who believes that the medical profession should have representation in our legislative bodies so that the necessity for legislation dealing with hygienic measures affecting the health of the whole nation can be properly and intelligently emphasized. At present Ohio is misrepresented in the United States Senate by two men whose records are of the most unstatesmanlike character. It is in the place of one of these, Senator Foraker, whose term expires next March, that the friends of Dr Reed hope to see him given an opportunity to exercise his wide experience of public affairs. Between these two men there should be no doubt in the minds of physicians as to which would be more preferable. Senator Foraker's attitude towards the profession and toward all that it stands for is too well known to require explanation.

The qualifications of Dr Reed for such a position and the value that his services would prove to the public at large are shown by what he has already accomplished. The passage of the Pure Food and Drug Bill was in no small degree due to his personal efforts when, as chairman of the Committee on Medical Legislation of the American Medical Association, he appeared before a committee of Congress to urge the adoption of this all-important measure. He has rendered valuable public service on numerous other occasions, such for instance as representing the United States at several International Congresses. His reports upon conditions in Panama when he acted as Special Commissioner to President Roosevelt created widespread interest and led to many important reforms.

The presence of such a representative in the United States Senate would be of the utmost value in furthering the enactment of much-needed legislation, such for example as the organization of a National Department of Public Health. The average politician utterly fails to understand the necessity for such measures and the personnel of the United States Senate would be vastly improved by the infusion of a little new blood of a variety somewhat different from that pertaining to those members who, although eminently fitted to direct legislation favorable to certain interests they represent, do not seem to realize the value of hygienic measures directed to the public good or oppose legislation of this sort for such selfish reasons as they exhibited in opposing the Pure Food and Drug Bill and the Child Labor Bill.

It is a great pity that the election of United States Senators in this State is not directly in the hands of the people. If such were the case party lines could be much more easily ignored, and the election of such a man as Dr Reed, as compared with either of our present Senators, rendered far more likely than it is under the present system. The question is not one of party politics at all, else we should not interfere, but it is one that appeals to all fair minded persons interested in such a legislative program as has been approved by the American Medical Association and the Ohio State Medical Association.

The Death of Dr C. J. Aldrich

The profession in Cleveland has recently suffered the loss of one of its most prominent members and one who had always taken a most active part in everything tending to advance the standard of scientific medicine. Charles John Aldrich was born in Spencer, Ohio, October 13, 1861. He was educated in the public schools and Baldwin University and graduated in medicine at Western Reserve Medical College in 1882. He was elected to the staff of the Cleveland General Hospital and was appointed Lecturer on Nervous Diseases in the University of Wooster in 1890. Since 1893 he had been Consulting and Visiting Neurologist to the Cleveland City Hospital. He was appointed Professor of Neurology in the Cleveland College of Physicians and Surgeons in 1905 and Professor of Nervous and Mental Diseases in the same in 1906. In 1907 he was made Consulting Neurologist and Psychiatrist to the new St. Luke's Hospital. He was elected President of the Cuyahoga County Medical Society in 1901; of the Medico-Legal Society, Cleveland, in 1902, and of the Cleveland Academy of Medicine in 1905. He had studied in the hospitals of London, Berlin and Paris, in 1896 and 1906, and for some time was Editor of the Bulletin of the Cleveland General Hospital. He was a very able and prolific contributor to current medical literature. Among the more important of these articles were: Caisson Disease; The Nervous Complication and Sequelæ of Pneumonia; Head Nodding; Tic; and Trap-Drummer's Neuroses.

In October, 1902, while hunting in Canada, he became lost in the woods and on account of a long march and the excitement he developed an acute saculated dilatation of the arch of the aorta which greatly limited his physical activity.

In January, 1908, he showed signs of an acute infection and with it the presence of a so-far unrecognized organism in the blood. The diagnosis of a malignant endocarditis was made; and at his death, which occurred April 29, 1908, the autopsy showed very extensive vegetations on the aortic valve. The vegetations contained the same organism as had been found in his blood. The aorta showed no degenerative changes in its coats, but there was a fairly well marked anuerysmal dilatation of the arch.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Iron: In the *New York Medical Journal* for April 11, R. E. Van Gieson summarizes the relative value of the various iron compounds and states that as to the metabolism of iron, it is a field which, in spite of the enormous amount of careful research that has been made, is confessedly a *terra incognita.* The first function of absorbed iron is to increase the iron reserve. The ingested iron, no matter of what character, is never utilized directly for the construction of hemoglobin. Direct primary anemia from loss of blood is not benefited by iron unless convalescence is retarded. In such cases it is not the lack of red blood-corpuscles that makes the real element of danger, but the fall of blood-pressure to a point where circulation fails. If the circulation can be maintained there still remains a sufficient number of red blood-corpuscles to carry on respiration, and the immediate treatment is to raise the blood-pressure within the vessels. He considers both the ferrous and ferric salts efficient. He especially advises a non-official preparation ferrum oxydatum saccharatum as mild but highly efficient, not irritating to the stomach, not discoloring the teeth and very valuable for children. Dialyzed iron too, not now official, is highly recommended. As regards the organic forms of iron he has found no better results from them than from other forms of iron. He considers that a careful study of iron metabolism shows that the official preparations of iron, so long useful in the past, will increase hemoglobin. The ferrous carbonate, the soluble oxid with sugar, the double salts with the vegetable acids, the solution of the perchlorid given in combination (with glycerin) and largely diluted with milk, are the forms most likely to produce good results. Directly conflicting views as to the value of the modern proprietary preparations exist among competent observers. In all iron medication the question of defective metabolism is important. Cases must be individualized and preparatory treatment is essential. Rest in bed, massage, milk diet, unfermented grape-juice and static electricity are valuable adjuncts preparatory to or during the administration of the iron compounds.

Tuberculosis: G. P. Sanborn, in the *Boston Medical and Surgical Journal* for April 9, considers the scope of therapeutic inoculation and asserts that in lupus some cases of inoculation with tuberculin T. R. and B. E. are attended with striking results. The ulcerative type heals more rapidly than the dry type, probably because local circulation is apt to be better. Tuberculous bone disease, in which surgical measures often repeated offer so little, is in very many cases amenable to systematic treatment with tuberculin, and the same is true of tuberculous adenitis in its early stages. Tuberculous peritonitis too in its early stages may be treated successfully with tuberculin and if there is much fluid it should be removed by tapping. He believes a large number of cases of local tuberculosis may be cured by systematic careful inoculation with tuberculin. As regards pulmonary tuberculosis he believes that in the light of present knowledge the results obtained are not what they should be. In these cases, there are two factors which complicate the giving of tuberculin, and these are, first, spontaneous autoinoculation, that is a diffusion into the blood of bacilli and bacillary products from the focus in the lung, which takes place in advanced cases with temperature even as they lie quietly in bed; second, an exactly similar process in earlier cases that may take place as the result of exercise. The effect of the autoinoculation depends on the amount of toxin set free in the blood; it may be so great as to prostrate the patient, or so small as to produce nothing but favorable symptoms and, in the latter case, the only method of measuring it is by its effect upon the blood as registered by the opsonic index. Staphylococcia, carbuncle, furuncle and acne are all but uniformly susceptible to treatment by appropriate vaccines. As to the septicemias, if we get them early before mechanical injury to the heart takes place, and obtain an organism from the blood, we may have some hope of doing good. In infections by the streptococcus while preparing an autogenous vaccine, we can use a stock multivalent vaccine. He states that the use of bacterial vaccines, without access to the laboratory, when certain information is needed, is unsatisfactory and may be a source of danger to the patient, though many cases may be conducted with clinical symptoms alone as a guide. On the other hand the extreme of using the opsonic index as a guide without reference to clinical symptoms is equally unwise and unscientific.

Arterial Disease: In the *Proceedings of the Royal Society of Medicine* for February, W. E. Dixon states that it is well known that drugs when administered to animals under certain conditions may cause gross anatomic changes. Thus if digitalis be given to young pigs in moderate doses for six weeks, the heart hypertrophies and postmortem examinations have shown that such hearts may weigh twice as much as hearts from normal animals of the same litter. The administration of drugs and toxins may give rise to certain arterial degenerations and of the exact causation of these conditions we know little except that poisons, such as syphilis and lead, play a considerable part; within the last two or three years it has been shown by different workers that any drug which has the power of considerably raising blood-pressure will, when injected into the circulation of healthy animals, bring about degeneration of the middle coat of the arteries. Generally about six injections produce this result and the effects occur alike in young and middle aged animals.

It has been shown that digitalis, squill, apocynum, barium, lead, adrenalin, nicotin, and even the inhalation of tobacco smoke will all bring about these changes. The origin of the sclerotic changes produced by the administration of drugs has been ascribed (1) to a toxic effect, and (2) to the simple mechanical rise of pressure. Lately evidence has been obtained, which he regards as very conclusive, that rise in blood-pressure alone can produce arterial disease, and the degenerative changes so induced are exactly comparable with those induced by the injection of drugs. All the evidence points to the muscle fibres being the essential seat of the disease. As to the question of exercise, he has found that violent dumb-bell exercise in men aged 60 raises the blood-pressure to twice the height or more that similar exercise will in men of 23 or 24. The rise in pressure seems to be sudden in onset and to disappear very rapidly as soon as exercise is succeeded by rest. As to smoking, we have abundant evidence to show that if a man unused to tobacco be induced to smoke a cigar, his blood-pressure first rises from 10 to 25 mm. of mercury, and after from 15 to 30 minutes of the smoking has been continued, it drops suddenly from 30 to 50 mm. or more. The habitual and moderate smoker, however, if subjected to the same ordeal, shows no change beyond a slight rise of four or five mm. in his blood-pressure. In those who have acquired a tolerance to tobacco, smoking produces but little effect on the blood-pressure, but in the non-tolerant sufficient alterations may occur, as has been demonstrated with rabbits, to induce a slight degree of arterial degeneration. In other words, the moderate and continuous smoker throws less strain on his blood-vessels than the man who smokes occasionally.

Hexamethylenamin: S. J. Crowe, in the *Bulletin of the Johns Hopkins Hospital,* gives the principal results of investigation on the excretion of hexamethylenamin (urotropin) as follows: 1. After its administration by the mouth, it appears in the bile and pancreatic juice of dogs; it finds its way into the bile both through the liver and through the wall of the gall-bladder. 2. It has been demonstrated in the bile, cerebrospinal fluid, synovial fluid, saliva, pleural effusion, and blood of man. 3. When given in sufficiently large doses (75 grains per diem) it appears in the bile in quantities which suffice to exercise a decided bactericidal action.

Vascular Constrictors and Dilators: In the *Medical Record* for April 25, Egbert LeFevre considers the therapeutics of the vasoconstrictors and vasodilators. The treatment of high arterial tension must take into consideration not only the stage but also the cause. The first stage is the curable one, and the most important part of the treatment is to find the cause and remove it if possible, or at least bring the blood vessels under normal physiologic vasomotor control. Tobacco is especially apt to induce arterial spasm in susceptible persons, and both it and alcohol should be prohibited. The diet should be simple and wholesome. Mental and nervous excitement should be avoided and it is rarely necessary at this stage to act upon the blood-vessels by the use of the more active vasodilators. In the second stage, it is necessary to determine to what extent the obstruction to the circulation is due to the sclerotic changes in the vessels, and how much is due to spasm of the muscular coats. High blood-pressure is in many cases a conservative process and the indications are to control it rather than to try to reduce it to the normal level. In the use of vasodilators it must be remembered that their effects are entirely limited to those portions of the arterial tract in which the muscle tissue is still capable of exerting control and they have absolutely no action upon the obstruction caused by the fibrotic changes in the vessels. When high blood-tension is associated with kidney disease, the degree of blood-pressure as such is considered too exclusively and the fact is lost sight of that there is need of a higher blood-pressure to carry on an efficient circulation in the diseased kidney. Excessive blood-pressure does not itself constitute an absolute indication for treatment, and the active vasodilators should be used only to meet emergencies as stenocardia, angina pectoris and cerebral disturbances. The vasodilators of the nitrite group, as nitrite of amyl, and nitroglycerin, ordinarily have only a temporary effect and when sustained high pressure is associated with disturbances that cause anxiety, they should be given cautiously and the pulse watched. No sudden or extreme action from these drugs is desirable; they should be used only to meet emergencies. The effect of the vasomotor dilators is not entirely gauged by the fall of pressure, but by the patient's subjective feelings and the pulse rate. Control of high blood-pressure by cardiac sedation is not justifiable except in cases in which cardiac hypertrophy is excessive and cardiac overaction occurs under nervous excitement or physical exertion. Cold baths of plain water raise the arterial tension and if the patient reacts quickly this rise will be of short duration. If to the effect of cold, pressure is added in the form of spray or strong needle douches to the entire body, the blood-pressure is raised and persists for some time. It cannot be too strongly emphasized that the bath treatment, of whatever form used, must be adapted to the individual patient, all the details as temperature, duration, amount of saline and degree of effervescence must be determined and after the bath the condition of the patient should be observed.

Diabetes Mellitus: In the *Medical Council* for April, Samuel E. Earp summarizes the treatment of diabetes mellitus and doubts whether or not we can rely to any great extent upon organotherapy and while the use of a therapeutic agent from the islands of Langerhans has been suggested in combination with the bromid of gold and arsenic, we must await the results. He believes a patient with this disease should be given a modified diabetic diet and water in moderation. Freedom of mind and body and cheerfulness are important factors. Some cases of glycosuria will get well by the above method with the addition of alteratives and tonics. Many of the cases reported cured are, he believes, simply a temporary form of glycosuria, as distinguished from the organic variety or true diabetes mellitus of which few patients if any get well. Treatment will modify the disease and possibly pass the allotted limit of 10 years or perhaps a longer period but these are not cases of temporary glycosuria and the terms diabetes mellitus and glycosuria should not be used interchangeably. In a case of diabetes mellitus, in addition to the treatment given, other agents may be used and as yet we cannot get away from the use of arsenic. Perhaps Clemen's solution may be better than Fowler's solution. The physiologic action should be obtained and then the dose should recede. Codein may be used in doses of one-fourth grain three times a day, gradually increased until 10 grains or even more may be used during the day and then, depending on circumstances, we may reduce the quantity. Salicylic acid is worthy of mention, especially if there be a gouty or rheumatic diathesis, and if a syphilitic taint exists the iodid of potassium is evidently of value. Alkaline waters are given to overcome the acidosis, but even an ounce of bicarbonate of sodium in 24 hours will not insure neutralization. Normal salt solution and strychnin are also used. As regards purgation, as a rule the use of a laxative is all that is necessary and sulphate of magnesium is best. Jambul and many other remedies may be used and the fluid extract of chimaphila in doses of two drams three times a day appears to have some value as a curative agent.

Thyroid Extract: Charles E. deM. Sajous, in the *Monthly Cyclopaedia,* believes it now possible to predicate the disorders in which thyroid extract will prove useful. (1) In diseases due to slowed destruction of toxic wastes as shown by its action in tetany, epilepsy, eclampsia, disorders of the menopause, asthma, chronic rheumatism, migrain, and also in those due to slow oxidation of fats, as in obesity and Dercum's disease, adiposis dolorosa. (2) In diseases due to lowered general nutrition of all tissues, including the bones as shown by its action in cretinism, myxedema, and kindred disorders, osteomalacia, rickets and osteomyelitis. (3) In disorders due to lowered nutrition of the muscular elements including the skeletal and vascular muscles as shown by its action in general adynamia, neurasthenia and myasthenia. (4) In all cases in which the processes of repair or absorption are deficient as shown by its action in delayed union of fractures, certain benign and malignant neoplasms, syphilitic tissue and bone necrosis. (5) In infectious diseases as shown by its action in typhoid, tuberculosis, infectious tonsillitis and certain exanthemata.

Tuberculosis in Children: In the *Archives of Pediatrics* for April, John Lovett Morse divides tuberculosis in children into two classes, surgical, including "scrofulosis" and "lymphatism," and visceral. Experience with children suffering from surgical tuberculosis in sanatoria abroad shows that, on the whole, they do better at the seashore than inland, and they do better at the seashore if the climate is temperate, than if it is cold or warm. The delicate, slender, neurotic type of children do better inland in comparatively mild climates and he cautions against over-exercise with this class of cases. The child who is heavy, coarse and phlegmatic does better at the seashore. If amyloid or kidney disease develop both classes do better in a warm and dry climate. While visceral tuberculosis in adult life means, to all intents and purposes, pulmonary tuberculosis, in the vast majority of instances uncomplicated, this is not the case in early childhood. At this age pulmonary tuberculosis is usually not a local disease, but part of a more or less generalized tuberculosis; the younger the child the truer this is. Children with pulmonary tuberculosis are less liable to bear extreme cold than those with surgical tuberculosis and withstand hardening and exposure very poorly. The dietetic treatment of tuberculosis in early life is essentially the same as in adult life. The drug treatment in childhood is purely tonic and symptomatic. The susceptibility to opium should be remembered. He has had no experience personally with the effects of tuberculin in childhood.

Nervous Syphilis: In the *American Journal of the Medical Sciences* for April, T. H. Weisenberg believes that it is in the early stages of syphilitic lesions of the nervous system, in the period of round cell infiltration, that antispecific treatment is of the greatest benefit, and treatment should be promptly and vigorously instituted. The best results can be obtained from inunctions of mercury, a dram a day, to be rubbed in in different places. The best plan to follow is to apply this daily with the exception of Sunday, and to keep it up for a period of about six weeks. If any improvement can be hoped for, it will be manifest in that time. If at the end of that period there is no improvement such treatment might as well cease. It is well to have the patient's teeth looked after and during the treatment a borax mouth-wash should be used, and a hot pack, two or three times a week, will aid in the absorption of the mercury. It is his experience that whenever any benefit has been obtained, it has been the result of the use of mercury and not of the iodids. Even in specific manifestations which come on many years after infection, mercury is the only drug of benefit. Iodids probably do good and should be given either in conjunction with the mercury or preferably after the mercurial treatment.

Therapeutic Observations: Torald Sollman, in the *Journal A. M. A.* for April 11, presents a strong plea for accuracy in therapeutic observation and in the selection of remedies of known or promising therapeutic worth. The first essential to progress, he asserts, is sound observation and sound experimentation and to the neglect of this fact he ascribes to a large extent the relative decadence of therapeutics. The only way to discover therapeutic facts or any other facts is to *see* and to *try,* it is the only way at present for the individual physician to learn the art of therapeutics and it is an absolute essential to the advancement of the science of therapeutics. Too often complex treatment is merely a cloak to ignorance, an expression of the absence of any definite purpose. To make any advance we must confine ourselves to a relatively small number of relatively simple remedies, to the most promising, and we must rigorously exclude those which are unpromising, especially those which are plainly unscientific. As to the proprietary products the manufacturer is too often more interested in the commercial than in the scientific side of the product. The practising physician will here find the greatest use for the past work of the Council on Pharmacy and Chemistry, which excludes those products whose use would mean a waste of time, money and opportunity.

Academy of Medicine of Cleveland

THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The thirty-fifth meeting of this section was held Friday, April 24, at the Cleveland Medical Library, A. R. Baker in the chair.

H. G. Sherman presented a young boy in good general health, who had been under his observation for three years. The present trouble with his eyes began after an attack of diphtheria and he had had periodic attacks ever since. The attacks consisted of an inflammation of the bulbar conjunctivae with small phlyctenoids or bodies of a lymphatic nature lying in chains about the corneal limbi and extending out over the bulbar conjunctivae. These attacks were most frequent in midsummer, especially during July and August, but have also occurred in midwinter. The attacks varied in time. They possessed some of the characteristics of vernal catarrh. The bulbar conjunctiva alone was involved. The boy had a hyperopia of one diopter for which he wore glasses. Examination of the nose and throat was negative and vision was not impaired. There was no abnormal secretion. Medication of all kinds, both of mineral and vegetable nature, had been tried without any improvement. Hot and cold packs had also been used.

The program was as follows:

1. European Eye Clinics, by L. Wolfenstein. (To appear in full in the JOURNAL.)

2. The Permanent Closure of Large Perforations in the Tympanic Membrane with Marked Increase in the Hearing Distance, by W. B. Chamberlin. (Appearing in full on page 342.)

J. M. Ingersoll, in discussing the paper, gave a description of most of the ear drums made for this purpose.

H. G. Sherman reported that in place of cotton soaked in paraffin he had often used collodion to seal a bit of cotton in the ear drum with good results.

A. R. Baker said that he taught his patients to make plugs of cotton for their ears.

S. H. Large considered that the use of paraffin would be less liable to cause suppuration.

3. Unusual Mastoid Operations in Children, by T. A. Burke.

W. H. Tuckerman, in discussing this paper, reported one case of mastoid disease in which there was no involvement of the middle ear and no connection between the mastoid and the middle ear. There was no history of trouble in the ear, but it was primarily in the mastoid.

H. G. Sherman reported the case of a young boy who had grippe for five weeks and who developed a swelling behind the ear indicating a mastoid involvement. From his features, it was evident that he had a general sepsis. The entire mastoid was curetted and for 10 days the patient progressed favorably. Then the temperature suddenly rose and, owing to the speaker's illness, the boy was seen by F. E. Bunts, who again operated, opening up the frontal sinus, but no pus was found. Later the temperature again rose to 105½°, and the patient had a pupil which dilated when exposed to light. There were at no time any chills, but there was stiffness in the neck and pain in the back. Later the temperature fell to normal. Through this entire time since the first operation the boy had been expectorating pus.

4. Case of Severe Hemorrhage from the Nose in a Hemophiliac, by S. H. Large. A man, a butcher by trade, who gave a history of much bleeding from small cuts, had a hemorrhage from the nose which was

beyond control. The nose had been packed several times without result. He was removed to the hospital where one anterior and two posterior plugs were inserted into the nose without result. No lesion could be seen in the nose. Finally 10 cc. of serum was prepared from a Belgian hare and injected hypodermically. Following this, he developed a temperature of 100°, some cellulitis about the eyes and a moderate nephritis. He also developed an otitis media for which a paracentesis was done. Hemorrhage stopped and it was noted that clotting was accomplished very quickly (30 seconds).

EXPERIMENTAL MEDICINE SECTION

The thirty-ninth regular meeting was held Friday, May 1, at the Cleveland Medical Library, C. A. Hamann in the chair. The program was as follows:

Cellular Osmosis and Heredity, by A. B. Macallum, Professor of Physiology and Physiological Chemistry, University of Toronto.

Professor Macallum defined the attitude he was to take in this address as discussing in the questioning spirit the validity of the application of two of the doctrines of physical chemistry to physiologic phenomena of osmosis. One doctrine was that in solution the substance dissolved is in such a condition that its molecules are separated from each other as they would be if such substances were in a gaseous condition occupying the same volume as the solution and that it, in such solutions, illustrates all the gas laws. The other doctrine, associated with the first and indeed inseparable from it, was that of the semipermeable membrane.

The concept of a semipermeable membrane was then stated and reference was made to the work of Moritz Traube, who in 1865 began the study of what are now known as precipitation membranes. The method was then described by which such a precipitation membrane of cupric ferrocyanid was formed at the surface of contact between solutions of cupric acetate and potassium ferrocyanid. It was pointed out that osmosis of the water took place through this membrane but that neither of the salts would pass through it. Pfeffer's modification of this work by employing porous pots as a mechanical support for these precipitation membranes was then reviewed and reference was made to some of his striking observations upon osmotic pressure, such, for instance, as the fact that osmotic pressure is dependent upon the strength of the solutions, being almost proportional to the concentration in the case of organic solutes like cane-sugar and dextrose and also in proportion to the rise of temperature, but in the case of salts the results were not so constant. The explanation of these results by van 't Hoff embodies the now well known theory of gas nature of solutions which is accepted widely as a cardinal principle of physical chemistry. Allusion was made to Pfeffer's belief that the unpermeability of such a membrane as the wall of a living cell depended upon the size of the molecules of the substance held back by it. It so happened that the water molecule was smaller than any of the solute molecules with which he worked and his deductions were only natural. In fact, it is doubtful if physical chemistry would ever have included the concept of the semipermeable membrane were it not for the difficulty experienced by botanists and physiologists in accounting for the capacity of living cells to retain their organic constituents.

The behavior of a membrane of palladium at a temperature of 200° C. in allowing the diffusion through it of hydrogen while it is impermeable to such other gases as CO, CO_2 and N demonstrates that such a membrane does not agree with the sieve theory of a semipermeable membrane since the molecules of these different gases are of the same size. The correct explanation of the phenomenon is that hydrogen is soluble in the palladium while the other gases are not.

Even when dealing with precipitation membranes the sieve theory must be abandoned as shown by the greater permeability, under mechanical pressure, of the copper ferrocyanid membrane to the larger molecules of alchohol than to the smaller molecules of water. Also by the fact that when a gutta percha membrane separated pure alcohol and pure water the alcohol passed through to the water, the reverse of what happens when a copper ferrocyanid membrane is used.

Pringsheim, by varying the method of forming the precipitated membrane, showed that it was not the size of the molecules which determines whether they shall go through the membrane; it is rather more or less the affinity of the dissolved substances for the substance constituting the membrane that is the deciding factor. Reference was made to the behavior of various solutions to other membranes such as pig's bladder, as used by Nernst, and rubber membranes by Raoult and Flusin. All these results distinctly point to an action on the part of the membrane which is not postulated in the semipermeable membrane of Pfeffer and van 't Hoff. The difficulty of accounting for some of the phenonema of osmosis on the postulates of a semipermeable membrane and the gaseous condition of the solute has led a number of physicists and physiologists to reject both as quite inadequate and unsatisfactory. Traube explains all the phenomena of osmosis as due to difference in surface tensions on opposite sides of the septum, the difference determining the direction and velocity of the osmotic current, the direction being toward the liquid having the greatest surface tension. A somewhat parallel view is also held by Battelli and Stephanini. That surface tension does play a considerable part in osmosis is shown by some elementary facts in some solutions, for instance the increased concentration of a solution of salt in contact with the wall of the containing vessel, upon the walls of a capillary tube or upon the fibres of a filter. Surface tension, however, is not a factor sufficient to explain all the phenomena of osmosis and especially those manifested in cellular absorption and effusion. It will not explain the absorption of colloids in the intestines, the passage of fats and proteins through the endothelial lining of capillaries and the diffusion through living membranes of material which is not in solution but rather in suspension as colloids. The difficulty of explaining these has led to a revival of the doctrine of vitalism as a distinct force concerned in the exchange of material through the septa formed by living cells. It does not, however, seem justifiable as yet to adopt this attitude.

Overton's work upon the velocity with which chemical compounds diffused into living cells was next reviewed. He believed that certain lipoid bodies in cells are the cause of the diffusion into the latter of various lipoid-soluble substances. That lipoid material does obtain in cell membranes seems to be indicated by the results of *intra vitam* staining. A remarkable fact is that all the principal narcotics, anesthetics and antipyretics are rapidly diffusing substances, as was also pointed out by Hans Meyer, and both he and Overton hold that the efficacy of a narcotic depends upon its solubility in lipoids. Various criticisms of Overton's theory by Traube and Moore were then discussed and reference was made to the explanation offered by Nathonson's modification of Overton's theory which postulates that the membrane is a composite or mosaic structure in which a portion of the component elements consists of unswellable cholesterin and the remainder of protoplasic material which has the properties of a typical semipermeable membrane. While this may occur in the case of red blood-cells the assumption of a mosaic structure merely complicates matters and illustrates the inadequacy of Overton's theory.

Kahlenberg's researches show that the distinctions between colloids and crystalloids, held valid since Graham's time, require modification. A substance acting as a colloid to water is not necessarily a colloid to every solvent. Also that in organic colloid suspensions there are two phases: a solid-water phase constituting the ultramicroscopic suspension particles, and the water-solid phase forming a true solution, so that it is not correct to speak of colloids as wholly suspensions. The fallacy of employing one kind of membrane as a means of distinction between suspensions and solutions was emphasized and also that we must discard all the concepts we have gained from the results obtained with an ordinary dialyser of parchment. It must be postulated that the reason why substances which are concerned in the vital process circulate and diffuse into tissue elements is that the physiologic fluids, extracellular as well as intracellular, are so composed as to dissolve them.

Kahlenberg found that by employing pure rubber septa and various fluids as solvents that certain colloids would pass through the membrane while certain crystalloids would not do so. He was also able to separate two crystalloids from each other by osmosis and even to separate two colloids by the same process. These observations show that the membrane is not a passive element in osmosis and that the view that crystalloids always pass through membranes more readily than colloids is untenable, as just the opposite may occur. Whether substances can be separated by dialysis does not depend at all on their crystalline or non-crystalline nature, as is so commonly supposed, but upon their affinity for the septum employed. Osmosis is therefore due to the solvent activity of the membrane whatever its nature. The composition of the membrane and the solubility in that membrane of the solutes on either side of it are all important factors in determining whether osmosis shall obtain.

Professor Macallum then referred to his own investigations upon the microchemistry of the cell. He recalled the fact that caseinogen and egg albumen will be absorbed through the colloidal mucous membrane of the intestine and be excreted through the colloidal epithelium of Bowman's capsule in the kidney, also that fat can pass through an animal membrane into cells. The only explanation possible is that the membranes are of such a composition that they dissolve the water-solid phase of the colloids and pass them through to the other side. He went on to show that diffusion of colloid through colloid was shown in cells themselves, as in the passage of fat dissolved in colloidal substance through the epithelial cells and the adenoid network of the intestinal villus to the lacteal vessel. In developing nerve cells the chromatin diffuses out through the membrane of the nucleus to form the substance of the Nissl granules. The formation of paranucleoproteid of the yolk spherules from the chromatin of the nucleus of the ovarian ova of amphibia presents the same phenomenon. Other instances were also given showing that membranes in, and the protoplasm of, the living cell are capable of allowing colloids to diffuse through them and that living animal membranes do not necessarily distinguish between crystalloids and colloids. From his own studies he had determined that the nucleus is absolutely free from chlorids and phosphates and from sodium, potassium, calcium, and magnesium and that the nuclei of intestinal cells absorbing inorganic iron failed to show any of the inorganic iron while the cytoplasm of the cell may be surcharged with it, and he therefore concludes that the normal cell nucleus does not know the inorganic world, that it is the home of certain organic compounds only. The nucleus actively excludes inorganic salts, the nuclear membrane being the only structure so constituted as to exclude them. Hamburger has also noted this impermeability of the nuclear membrane. Certain organic compounds are also absent from the normal nucleus, such as fats, glycogen, free sugar, and probably free proteids like globulins and albumins.

The nucleus contains chiefly an iron-holding nucleoproteid which the histologist calls chromatin and which differs for different kinds of cells, although all are alike in the main in their composition. These compounds are synthesized in the cytoplasm, the synthesis of nucleic acid first occurring and this uniting with proteid to form the nucleoproteid, which in turn readily passes through the nuclear membrane into the nucleus. That the nucleoproteid can also pass out from the nucleus has been shown by the formation of Nissl granules in the developing nerve cells and the formation of prozymogen in the cytoplasm of secreting cells, due to the diffusion of a chromatin-like substance from the nucleus.

The permeability of the nuclear membrane by the iron-holding nucleoproteids is probably due to a degree of solubility of the latter in the substance of the membrane. The retention of the nucleoproteids by the nucleus is probably due to their entering the latter in the water-solid phase or hydrophilous form and then assuming the solid-water phase which is a less diffusible form as is shown by its constituting the chromatin masses. We can only speculate upon what produces this change from one phase to the other, although it would seem that the nuclear membrane brings it about. The important conclusions to be drawn are that iron-holding nucleoproteids so long as they remain in the interior of the nucleus are protected from chemical alteration due to the action of inorganic and other compounds which may invade the cytoplasm. Another is that this is the true function of the nucleus.

These two conclusions based on the composition and the properties of the nuclear membrane enable us to comprehend clearly what constitutes the physical basis of heredity.

The theory of Darwin upon heredity was then reviewed, that typifying "gemmules" from every cell in the body collect in the ovum and spermatozoon to reproduce in the offspring the features of both parents. The objection was made to it that it is impossible to conceive of such gemmules being accommodated in an ovum or spermatozoon. Reference was made to Weisman's theory that the transmission of a "germ-plasma" in the germ cell of the parent to the offspring accounts for the inheritance of ancestral characters. This germ-plasma is not affected by metabolic or other changes in the tissues of the individual but may spontaneously vary and thus give rise to varieties in the offspring of the species.

The true explanation was thought by Professor Macallum to lie between these two theories. He believes that the germ-plasma consists of nuceloproteids of certain definite fixed composition which are sorted out by the nuclear membrane and stored up in the nucleus, safely protected from the varied chemical changes that might affect them in the cytoplasm, and that these compounds are the factors in transmitting the inherited parental characters, slight variations in the composition of the nucleoproteids permitting of variations in the offspring, while providing for transmission of the general characteristics.

The nuclear membrane therefore makes this transmission of parental characteristics from generation to generation possible. Any change that would give rise to variations in the species must arise through a germ-plasma being altered in composition but to such a slight extent that it still is soluble in the nuclear membrane and therefore penetrates to the nuclear cavity and in consequence the offspring of the next generation would be somewhat different. Thus, without a nucleus there could be no fixity of type or of character. This constitutes the reason why the species of nucleated organisms vastly outnumber the non-nucleated, although originally all were without nuclei. The differentiation of the nucleus was the first step in a higher evolution and then came the differentiation into sex, which still further promoted this function.

The importance, therefore, of having a clear view of what osmosis fundamentally means is manifest. Through a form of it the cell nucleus, which knows not the inorganic world and which knows neither fat nor free carbohydrates, is the sacred receptacle for the heredity-bearing substance, the germ-plasma, alone. Through this osmosis and the structure concerned, the nuclear membrane, we see what an all important part a simply physicial property of matter rightly understood plays and has played in the progressive evolution of living forms on our planet.

W. T. Howard, in discussing the paper, said that he felt sure that he voiced the sentiments of all who are present when he said that they were greatly indebted to Prof. Macallum for his most interesting address. To those who were familiar in a general way with his work, this exposition and elaboration of his views had been particularly instructive. Those who were interested in cell studies would appreciate the great advantage Prof. Macallum had in being at the same time a morphologist and a physical chemist, unfortunately a very rare combination. He would not attempt to discuss the paper in detail, but would confine himself to a few points and would ask a few questions. The keynote of the paper, as he understood it, was the application of Kahlenberg's theory of the selective solubility of membranes to the theory of heredity, and Prof. Macallum had certainly brought forward a number of arguments in support of his position.

He was glad to hear him state his belief in the existence of a nuclear membrane, for some physiologists and morphologists deny its existence, a position which to him, in the light of Morcas' experiments upon the nuclei of Actinosphaerium Eichorni and certain egg cells, seemed too sweeping. He could not agree with Prof. Macallum that bacteria and yeast cells are without nuclei. It seemed certain from the work of Schaudinn and others that bacteria are possesed of nuclear material in the form of a chromidial network which, under certain conditions, may gather together in one or more masses with the appearance of morphologic nuclei. The same is probably true of yeasts.

He was particularly interested in chromidia,—the presence in the protoplasm of extranuclear nuclear material derived from the nucleus—and he was glad to hear that the speaker regarded the Nissl granules of ganglia cells as chromidia.

In closing, he wished to ask Prof. Macallum two questions: first, what did he believe the structure of the nuclear membrane to be? and second, what changes does it undergo to allow the passage of nuclear material from the nucleus to the protoplasm? These were questions of great importance. The nuclear membrane here is certainly capable of selective action, for in some secreting cells chromatin combined with plastin exudes from the nucleus, *e. g.*, in the pancreas cell and in other cells, plastin alone comes out, as in certain mucus secreting cells.

In reply, Prof. Macallum said that anyone who has examined fresh cells under the microscope under the most natural conditions would hardly be a doubting Thomas as to the existence of a nuclear membrane. The membrane itself is distinct enough. As was stated at the beginning, it is always well to review concepts and see whether they are well founded or not. Perhaps the question may arouse someone to study the constitution of the nuclear membrane, if not to establish beyond cavil its existence. The structure of the membrane has not been studied very carefully; it is a difficult problem. Carnoy was the first to call attention to some of its peculiarities. It was previously taken for granted that there was such a membrane, but before his day its construction was not analyzed. He came to the conclusion, after treating a number of nuclei with reagents, that it consisted of a network in which one can see the trabeculae forming a meshwork. Personally he was unable to accept this view.

That such a membrane can be altered very readily indeed is shown by the fact that one can alter the composition of the external membrane of the red blood corpuscle. This membrane is such as to prevent the hemoglobin and salts contained in the corpuscle from diffusing out. A simple reagent like distilled water may alter the membrane. That it is homogeneous seemed to him to be the case, but what its composition is we do not know. Anyone who will study its properties will at once see that it performs a function which an ordinary dialysing membrane, "semipermeable" or otherwise, does not manifest.

In regard to the exact composition of the Nissl material, he was not prepared to say; it is probably slightly altered chromatin. There have been apparently no observations on this point except those from his own laboratory. There is, however, no doubt that the Nissl granule material is derived from the chromatin of the nerve cell nucleus.

A vote of thanks to Prof. Macallum was then unanimously passed.

CLINICAL AND PATHOLOGICAL SECTION

The fifty-first regular meeting was held Friday, May 8, at the Cleveland Medical Library, W. G. Stern in the chair.

H. J. Gerstenberger presented an infant eight months old, showing the typical lesions of achrondroplasia.

S. S. Berger showed a patient who had been operated upon for abdominal actinomycosis and whose case he reported in the first paper on the program.

The program was as follows:

Actinomycosis Abdominalis, by S. S. Berger. (To appear in full in the JOURNAL.)

C. A. Hamann, in discussing the paper, said that when he saw the patient the diagnosis had already been made. To one familiar with the description of the disease the recognition was not at all difficult. The presence of a sinus, the bluish color of the opening and the marked board-like induration were absolutely characteristic. He knew of no other condition which produces such board-like rigidity. As to surgical treatment, one felt while operating on this patient as if groping in the dark. There were several sinuses and from these other passages branched off. He got deeply into the abdominal cavity, about six inches, somewhere among the intestinal coils. The lining of the sinus was thoroughly scraped out and some passages were followed up. The operation was rather unsatisfactory, though it apparently had accomplished some good. In this patient the use of iodid of potassium subsequently must be given some credit in the cure.

2. Osteitis Deformans, Report of a Case and Presentation of Specimens, by O. A. Webber (appearing in full on page 338).

3. Some Practical Points in the Treatment of a Few Diseases of the Ear, by J. M. Ingersoll (appearing in full on page 334).

D. S. Hanson, in discussing the paper, said that quite a number of years ago an ear specialist told him that in treating a great many cases of earache in an asylum for children, he thought that by dropping into the ear a four percent solution of cocain in the early stages, in a large percent of the cases, he had checked the process and prevented suppuration. He himself had followed this line of treatment for a great many years and believed he had avoided suppuration and congestion in this way.

4. Hemolysis Test for Malignant Tumors, by G. W. Crile.

After giving a brief review of the work upon hemolysis from the time of Metchnikoff in 1889, it was stated that the object of the work at the present time is to discover if possible a positive method of diagnosis of malignant tumors in the doubtful and early stages. The technic was briefly outlined and the following results recorded:

In 107 tests on normal cases no hemolysis was obtained.

In 50 tests in miscellaneous diseases, four showed hemolysis. These included the following cases: one of hemoglobinuria, one of eclampsia, one gastric case in which a diagnosis was not made and one of hematuria.

In malignant conditions, of 50 cases with carcinoma 39 showed hemolysis and of 16 patients with sarcoma hemolysis occurred in 13, making a total of 66 malignant cases which showed hemolysis in 53.

In testing patients subsequent to operation for malignant disease to see if they had been cured, 10 tests were made. Of these nine showed no hemolysis and one was questionable.

In two cases of papilloma one showed hemolysis and the other did not. Surgical tuberculosis showed hemolysis in nine out of 11 tests. In 10 cases of chronic suppuration tested none showed hemolysis.

Of the 13 malignant cases not giving a hemolytic reaction, one was a gastric case and a diagnosis was not proved; one was an advanced case of sarcoma of the spine; one patient had a suspected sarcoma; in one there was a recurrence of a carcinoma; in one there was cystic ovary; five cases had breast carcinoma; two had epithelioma of the neck; and one had lymphosarcoma.

The following cases of supposed malignancy showed no hemolysis and a later positive diagnosis proved the absence of malignancy. Two gastric cases; four gall-bladder cases; two cases of tumor of the thigh; two cases of cirrhosis of the liver; one of tumor of the chin; one of tumor of the clavicle; one of cystic ovary; and one case of cyst of the breast.

A patient on the medical service at Lakeside Hospital, March 18, 1908, showed hemolysis and reverse hemolysis and a tentative diagnosis of carcinoma of the stomach was made. The case had been diagnosed as anemia. On April 25 a tumor became palpable and a diagnosis of carcinoma of the stomach was made from a specimen of the tissue from the stomach contents.

Although up to the present time these results had been obtained the technic is exacting and as yet the results do not warrant the statement that the diagnostic value of the method is established.

L. W. Ladd, in discussing the paper, thought that if 24 hours were allowed for the hemolysis the technic would have to be very careful in order to exclude outside bacteria. In making blood cultures, the red blood cells often showed hemolysis in case streptococci grew out. This is due to the action of the bacteria upon the corpuscles.

F. C Vincent said that he understood that in carrying out the technic in these experiments the tubes had been kept in the incubator for one hour, then placed in the ice chest and kept in cold storage, which, he believed, would prevent the growth of organisms.

Reports of the regular meeting of the Academy on Friday, May 15, of the special Academy meeting on Friday, May 22, and of the Ophthalmological and Oto-Laryngological Section on Friday, May 29, are held over for the next issue.

Book Reviews

American Practice of Surgery, a Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors: Joseph D. Bryant, M. D., LL. D., Albert H. Buck, M. D., of New York City. Complete in eight volumes. Profusely illustrated. Vol. Four. William Wood and Company, New York, 1907.

This volume maintains the high standard established by the earlier numbers. The first chapter is a continuation of Part XIII, Diseases and Injuries of Joints. It deals with Dislocations and is written by Emmet Ricksford, of San Francisco, who discusses the subject in a very satisfactory manner.

Part XIV deals with Operative Surgery and is subdivided into a number of chapters. Charles B. G. DeNancrède, of Ann Arbor, discusses the Influences and Conditions which Should be Taken into Account Before One Decides to Operate, a subject which, he points out, can be but very generally considered without detailing the whole field of operative surgery. George Ben. Johnson, of Richmond, Va., contributes a chapter upon The Preparation for an Operation, the Operation Itself, and the Care of the Patient During and Immediately After the Operation. This includes the consideration of such factors as the diagnosis and prognosis of the particular case as well as the actual preparation of the patient, of the operating room, instruments, etc. Simplicity and asepsis rather than antisepsis are the keynotes of the measures suggested. The importance of the postoperative treatment is justly emphasized and in this connection the custom of routine stimulation and drugging is discountenanced, each case should rather be treated on its own merits. Anesthetics and the Production of General Anesthesia are fully discussed by Freeman Allen and F. E. Garland, of Boston. The Production of Local Anesthesia for Surgical Purposes is by James F. Mitchell, of Washington. He points out the great possibilities of local anesthesia in many conditions for which general anesthesia is at present usually employed. By using isotonic solutions, very small percentages of cocain or similar anesthetics combined with adrenalin are very satisfactory, the risk is practically *nil,* and the advantages over general anesthesia in most instances are beyond question. Spinal anesthesia is also considered in this chapter. The three following chapters allow but little scope for originality as the surgical principles are fairly well defined. Amputations and Disarticulations are discussed by W. L. Rodman and J. S. Rodman, of Philadelphia. This field of surgery is constantly narrowing owing to the steadily improving results of conservative treatment. H. J. Whiteacre, of Cincinnati, writes on Excision of Bones and Joints. Ligature of Arteries and Veins in Their Continuity is contributed by John M. Keyes, of New York. Minor Surgery, by R. S. Fowler, of Brooklyn, includes bandaging, the use of plaster of Paris and adhesive plaster, transfusion, etc. The subject is treated in a very general way as a good deal of the matter has already been considered in the former volumes. Plastic Surgery, by James S. Stone, of Boston, is thoroughly considered, especially that pertaining to the face. The numerous illustrations are very helpful in explaining the text.

Part XV, Orthopedic Surgery. Charles F. Painter, of Boston, writes upon Congenital Dislocations and also contributes a chapter upon Infantile Paralysis, under which heading Tendon Transplantation is taken up. Torticollis is by George D. Stewart, of New York. Deformities and Disabilities of the Lower Extremities are well described by Royal Whitman, of New York. Under this heading are considered among other things the various forms of talipes. This chapter, of necessity, overlaps somewhat that on Infantile Paralysis. Tuberculous Disease of the Spinal Column and the Deformities Resulting Therefrom is considered separately instead of being included in the chapter on the Tuberculous Diseases of the Bones and Joints in Vol. III. Clarence L. Starr, of Toronto, Canada, deals with the subject in a very satisfactory manner.

Bier's Hyperemic-Treatment in Surgery, Medicine and all the Specialties: A Manual of its Practical Application. By Willy Meyer, M. D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital; and Professor Dr. Victor Schmieden, Assistant to Professor Bier at Berlin University, Germany. Octavo of 209 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.00 net.

The author of this work has rendered a distinct service to the medical profession in America in giving in a concise manner the principles and use of Bier's hyperemic treatment in surgery, medicine and the specialties. Meyer was one of the first in this country to use the method, and the results he has obtained have been so remarkable that he has become more and more convinced of the value of the treatment as an important addition to our therapeutic resources. Schmieden, who was formerly Bier's assistant, came to this country in 1907 to demonstrate the method and was everywhere impressed with the interest shown in the subject.

The introductory chapters are devoted to an explanation of the theory of hyperemic treatment and its advantages over other methods, with a description of the methods of inducing hyperemia and general rules for its application. Then follow a number of chapters on the treatment of special diseases by means of artificial hyperemia in surgery, medicine and the various specialties.

The illustrations are numerous and serve well to illustrate the matter in the text, and the book will be found a very practical and useful one to any one interested in this subject.

The Submucous Resection of the Nasal Septum, by Otto T. Freer, M. D., Professor of Rhinology and Laryngology, Chicago Policlinic, Assistant Professor of Diseases of the Nose, Throat and Chest, Rush Medical College. Fifty pages, twenty-four original illustrations. Published by The Journal of Ophthalmology and Oto-Laryngology, 100 State Street, Chicago. Price, 50 cents.

This monogram contains an accurate and detailed description of the submucous resection as devised and elaborated by Freer. The operation as done by him today differs somewhat from his original operation, but the essentials are the same, the minor details having been modified from time to time as his experience has widened. At times the text lacks that terseness and clearness of description which one might expect from one of Freer's experience,—but this haziness is atoned for in the 24 illustrations which accompany the text and to which it frequently makes reference.

No doubt the booklet is an outcome of the demand of the rhinologist for a description of the Freer operation. This demand it well satisfies, and to the specialist it is of decided value. It ought not to be without value to the general practitioner who wishes to keep in touch with the more striking advances in the specialties. The author compares his own operation and those of the European school, notably Killian and Hajek. Those who are familiar with both methods, however, might find certain points of advantage in each.

In conclusion Freer sounds a note of warning which seems well advised. The submucous resection is a difficult operation. Like abdominal surgery, it should not be attempted by those whose training has not been long and careful. In the hands of the tyro it will not only prove unsatisfactory, but the end result for the patient will be worse than the original trouble for which he first sought relief. Poor operators can easily bring an operation, brilliant in its possibilities, into merited disrepute.

Proceedings of the Royal Society of Medicine. Volume I, No. 2, December, 1907. Longmans, Green & Co., London and New York. Price of each monthly issue, $2.00.

The present number consists of about 70 papers and case reports presented before the different constituent sections of the Society. Many of them are brief clinical reports, but there are a number of more lengthy communications. Among these latter is a Discussion on Pneumonia and its Complications, before the Medical Section. This discussion is continued from number one and is followed by a large number of statistics dealing with the complications of this disease as observed in the leading London Hospitals. The paper read by James Berry before the Surgical Section is of great interest. He analyzes 274 additional cases of removal of goiter by operation. He points out that operations for innocent goiter yield admirable results and, as a rule, complete relief from symptoms. The operation is a delicate one and special attention should be given to anesthesia and asepsis. He usually drains and he allows his patients up and around a few days after operation. Although his list includes no cases of genuine exophthalmic goiter there are at least 10 cases included in which were observed palpitation, tremulousness and other symptoms often found with simple goiter as well as with Graves' disease, a point to be borne in mind in making the diagnosis. He considers the advisability of removal of the gland for Graves' disease to be still an open question. An interesting paper is that read before the Pathological Section by S. G. Shattock, C. G. Seligmann, L. S. Dudgeon and P. N. Panton upon the Relationship between Avian and Human Tuberculosis. This paper offers rather conclusive evidence as to the non-identity of the bacilli causing the two types of tuberculosis. The Pathology of Epilepsy, read by A. E. Russell before the Medical Section, is also a valuable contribution to this subject. Space forbids the mention of other deserving articles. A plan to issue the reports of the different sections separately and to allow one to subscribe for only such reports as were desired would commend itself to us. The rather high price demanded for the combined reports might deter many from subscribing.

Milk and Its Relation to the Public Health.

Bulletin No. 41, Hygenic Laboratory of the Public Health and Marine Hospital Service, presents a very concise review of the literature on milk, together with much new work.

The chapter on Milk as a Cause of Epidemics is one of special interest. A general summary of the recorded epidemics is given somewhat in detail. The importance of careful handling of milk from the producer to the consumer is emphasized, step by step. A rather extensive list is given of epidemics of typhoid, scarlet fever and diphtheria, which have been considered as "milk-borne." In the examination of the milk supply of Washington, D. C. (223 samples), 6.72% showed sufficient tubercle bacilli to cause tuberculosis in guinea pigs. The relation of goat's milk to Malta fever, milk sickness, and the relation of cow's milk to the zooparisitic diseases of man are liberally considered.

The "Morbidity and Mortality Statistics as Influenced by Milk" present some very interesting data. In the cities of France, with over 30,000 inhabitants the death rate per 1,000 of children under one year due to diarrhea ranges from 211.1 in February to 606.4 in August. This was the average from 1892 to 1897, inclusive. Behring is credited with the statement that in Germany, among the children under one year old the death rate is 235 per 1,000. "Only 510 males per 1,000 attain manhood and not more than a third of these are found to be fit for military service."

These conditions he attributes to the effects of infection from milk during infancy. It is further shown that infant mortality is largely due to the manner of feeding,—breast or artificial feeding. In Norway, where breast feeding is largely practised, the death rate is 104 per 1,000, while in Wurtemberg, where artificial feeding is quite common, the rate is 354 per 1,000. At Finsbury, England, Sandilands observed 695 infants of whom 139 died under nine months of age from diarrhea. Of the fatalities only 16% were breast fed, while of the survivors 69% were breast fed. The effect of using Pasteurized milk is shown by statistics collected from the Straus Pasteurized Milk Depots in New York City, where it was found that for the five years previous to the use of Pasteurized milk the infant death rate was 96.2 per 1,000 while with the increased use of Pasteurized milk the rate has fallen to 55 per 1,000.

The subject of Ice Cream is very thoroughly treated by H. W. Wiley. Of 263 samples of ice cream collected in Washington, D. C., between October 13, 1906, and July 29, 1907, only five were found to contain less than 500,000 organisms per c.c. and only 76 contained less than 5,000,000 organisms.

The Chemistry of Milk is thoroughly reviewed: giving in addition to elementary milk chemistry, (1) the action of heat and acids; (2) the action of milk enzymes; (3) the action of digestives enzymes, and (4) bacteria and various other microorganisms. A very complete classified bibliography is appended.

The Value of a Bacteriological Count in the Control of Market Milk is pointed out by Rosenau, especially as it applies to infant feeding.

The Germicidal Property of Milk and the Significance of Leukocytes in Milk are reviewed.

In speaking of the Conditions and Diseases of the Cow Affecting the Milk, Mohler recommends among other things that "all cows on dairy farms be tagged, tattooed, or otherwise marked for purpose of identification," "that all milk produced on such farms be from tuberculin-tested cattle which shall be retested at least once a year, or be subjected to Pasteurization under supervision of the health department;" and "that no license be granted except to applicants having herds free from tuberculosis."

The Production of Sanitary Milk is carefully discussed and illustrated by Ed. H. Webster, chief of the Dairy Division. A list of "Twenty-one Suggestions" are given with the suggestion that the Health Officer might well distribute them to be posted in a conspicuous place in every farm, dairy house and city milk plant.

The Water Supply for Dairy Farms; the Classification of Market Milk; Certified Milk; Pasteurization of Milk; Infant Feeding; and the Municipal Inspection of the Milk Supply of the District of Columbia are thoroughly considered.

This is a publication worthy of wide circulation, especially among those interested in the production and control of good milk and its products.

Medical News

J. J. Buel and family, of this city, sailed for Europe May 23, for a three months visit.

O. H. Boulee has removed his offices from the Lennox Building and 3957 Payne Avenue to 1687 East 55th St.

D. P. Allen was elected a member of the Council of the American Surgical Association at the annual meeting in Richmond, Va., May 16.

O. Pomeroy, of Chardon, has returned from spending the winter in Florida.

H. S. Upson and wife, of this city, sailed May 16, for Genoa.

F. C. Vincent has opened an office in the Kingmoore Building, 1110 Euclid Avenue.

Secord H. Large, who was operated upon for appendicitis at Charity Hospital late in April, has made a satisfactory recovery.

W. H. White, of this city, recently returned from Cuba. While there he spent two weeks at the Havana Leper Hospital in which are 129 patients.

The Charity Hospital Medical Society met Wednesday evening, May 13, 1908. The program was as follows: Presentation of Cases, E. F. Smith; The Present Status of Roentgen Diagnosis and Therapy, G. F. Thomas; Some Remarks on Lipoma, C. A. Hamann.

M. Loewenthal has moved his office from the Rose Building, to 2453 East 55th St., where he has opened a Rest-Cure Sanatorium for the treatment of nervous and mental disorders by hydrotherapy, massage, electro-therapy and other measures.

Commander White of the United States Navy delivered an interesting lecture on Naval Life before the Cleveland Medical Library Association at the Library May 4, 1908. He related incidents of his personal experience during the great storm at Apia Bay, Samoa, in 1887, at which time many lives were lost and several American warships wrecked. The lecture was illustrated with stereopticon views.

A. B. Aldrich, of Ashtabula Harbor, was held up and robbed by six foreigners on May 5. The robbery occurred in the forenoon while he was driving along the Lake Road.

The annual meeting of the St. Clair Hospital Staff was held March 26, 1908. W. B. Laffer was elected to the Staff as Neurologist. The following officers were elected for the coming year: Chairman, A. F. House; Vice-Chairman, R. Bailey; Secretary, J. M. Moore. Thirteen of the 16 members were present and enjoyed refreshments provided by the matron.

The Dermatological and Genito-Urinary Section of the Ohio State Medical Association has had its scope increased by the addition of Proctology. W. I. LeFevre of this city was elected chairman of the section for the coming year.

The Lakeside Hospital Medical Society held its regular monthly meeting Wednesday, April 29, 1908. The following patients were shown: A Case of Asymmetry of the Body, Mirror Writing, and Multiple Neuritis; C. L. Cummer. A Case of Congenital Hereditary Tremor and A Case of Hemiparesis with Clonic Spasms; C. F. Hoover. A Case of Subphrenic Abscess following Appendicitis, Simulating Empyema; H. G. Sloan. Reports of the following cases were made: A Case of Bradycardia following Pneumonia in a Child one year old; B. C. Barnard. Two Cases of Ectopic Pregnancy: (1) Simultaneously in Both Tubes, (2) Twice in the Same Woman; Hunter Robb. A Case of Intestinal

Obstruction due to Gall-Stone; J. R. Beiter. A Case of Embolism of the Superior Mesenteric Artery; C. N. Stone. The following officers were elected for the ensuing year: President, C. F. Hoover; Vice-President, H. L. Becker; Secretary, B. C. Barnard.

The commencement exercises of the Cleveland College of Physicians and Surgeons were held at Epworth Memorial Church, Wednesday, May 20. Prof. Richard Parsons of the Ohio Wesleyan University delivered an address on ''The New Citizenship.'' President Welch conferred the degree of Doctor of Medicine upon Reed W. Anderson, Arthur T. Carter, Frank C. Chvatal, Byron B. Colvin, Everett P. Coppedge, Benjamin C. Deeley, Earl W. Keyes, Fred G. King, Edward C. Konrad, Angeline M. Lemon, Frank W. MacManus, Carl L. McDonald, Fred J. Melzer, William E. Merrick, Jeannette C. Miller, Joseph A. Neuberger, William B. Rasing, Julius M. Rogoff, Oliver P. Walker, William G. Zantiny.

President Roosevelt has accepted the presidency of the International Congress on Tuberculosis to be held in Washington, D. C., September 12 to October 12, 1908. Dr Edward L. Trudeau has been elected honorary president of the Congress, and Vice-President Fairbanks, Speaker Cannon and the governors of the States have been asked to serve as vice-presidents.

The United States Civil Service Commission announces an examination on June 17, 1908, at Cincinnati, Cleveland, Columbus, Ironton, Toledo and Zanesville, Ohio, to secure eligibles from which to make certification to fill two, and possibly three, vacancies in the position of medical interne (male) and one vacancy in the position of medical interne (female), at $600 per annum each, with maintenance, in the Government Hospital for the Insane, Washington, D. C., and vacancies requiring similar qualifications as they may occur. Applicants should at once apply to the United States Civil Service Commission, Washington, D. C.

Deaths

S. R. Walker, of Aurora, died suddenly April 19, aged 40.

J. A. Frame, of Columbus, died April 28, from cerebral hemorrhage, aged 58.

Samuel Nickels, of Cincinnati, died April 21, aged 74.

Viceroy M. Bailey, of Dayton, died April 22, after an operation for appendicitis, aged 54.

Thos. J. Casper, of Springfield, died of pneumonia, April 21, aged 70.

Daniel L. Sullivan died at his home in Columbus, from typhoid fever, April 24, aged 32.

W. B. Hedges, of Delaware, died of pneumonia, May 14, aged 73.

Wm. Clark, for 30 years a practitioner of Berea, died in this city April 4, at the age of 82.

A. T. Quinn, of Wilmington, died May 19, aged 71.

D. W. Gans, of Massillon, died May 17.

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Obscure Fever in Infancy and Early Childhood

By JOHN LOVETT MORSE, A. M., M. D.,

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It is safe to assume that at this age a daily rise of temperature above 99.5° F. is abnormal and the manifestation of some diseased condition. Occasional rises to this point, or even higher, are, however, not very uncommon and are apparently of but little significance. It is important before becoming alarmed and excited by a rise in temperature to be sure that it really is elevated. In one of my cases, which ran an elevated temperature both morning and evening for some weeks without any apparent cause, it was finally discovered that the family thermometer registered 2° too high. Malingering can, of course, be ruled out at this age, and hysteria is practically unknown. Temporary elevations of temperature are sometimes due to excitement and nervous strain. An elevated temperature may also be due to active exercise and over-fatigue in nervous children. In such cases the temperature is usually elevated only in the afternoon. It must be remembered in this connection that elevations of temperature occur from slighter causes at this age than in later childhood because of the greater irritability of the nervous system, and that, consequently, they are, on the whole, of less importance.

It is not my purpose to consider, except incidentally, those

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elevations of temperature which are obscure merely because a careful physical examination has not been made, although, unfortunately, such instances are common enough. The causes of fever in infancy and early childhood that are most commonly overlooked through gross carelessness are diseases of the thoracic organs, especially empyema. Pneumonia is often overlooked or excluded, however, because of the absence of physical signs, physicians not realizing that they may not develop for several days, or even not before the crisis. They also forget that they may be present only high in the axilla or in the middle of the back along the spinous processes, and consequently fail to find them even when they are present. An unresolved pneumonia may, in rare instances also, cause a long-continued fever. Many men fail through carelessness to find an encysted empyema or to suspect an interlobular empyema. Others exclude empyema as a cause of fever because there are no chills or sweating. In my experience these are very unusual in empyema at this age.

Endocarditis: Endocarditis is very common in children and is very often accompanied by fever. The temperature may be elevated for weeks and months without any increase in the symptoms or change in the physical signs. While not a very serious symptom in such cases, it is, nevertheless, a sign of danger and an indication for rest.

Typhoid fever and malaria: Typhoid fever and malaria should not cause confusion for any length of time, as an examination of the blood will quickly demonstrate the presence or absence of these diseases. It must be admitted, however, that in some instances a long-continued fever will yield to quinine although no plasmodia can be found in the blood.

Eczema: Eczema is often accompanied by fever which is frequently of long duration. The rise of temperature in this disease is presumably due to the absorption of toxic products from the skin. It is often associated with degenerative changes in the organs and sometimes with endocarditis, which may be the cause of the fever. The frequency with which fever occurs in uncomplicated eczema is not generally recognized, and the presence of some other condition is, therefore, suspected.

Fever in the new-born: Holt has described a series of cases of fever occurring during the first five days of life, generally from the second to the fourth day, and accompanied by no evidences of local disease. He believes that this rise of temperature is due to starvation, because the temperature falls very rapidly when the child is put upon a full breast, when artificial feeding is begun or when water is given freely. He believes that this fever can hardly be confounded with that due to pyogenic infection, which, he says, rarely begins before the fifth or sixth day. I am inclined to be skeptical as to this condition, partly because starvation at other periods of infancy is always associated with a subnormal temperature unless there is an infection, and partly because we know that infection may occur not only during and immediately after birth, but probably also before birth, the opportunities for infection being very numerous. When infection takes place thus early fever may develop in 24 or 48 hours. The rapid fall in the temperature in these cases coincident with the ingestion of sufficient food or water may also be explained by the rapid elimination of toxic products as the result of the increased quantities of fluid taken or by the action of antitoxins derived from the milk.

Sepsis is, as already mentioned, the most common cause of rises of temperature in the new-born. It is safe to assume that a rise of temperature at this age is due to sepsis unless it is proved to be due to some other cause. The possibility of a rise in temperature from the too vigorous application of external heat should also be remembered in this connection.

Dentition: Elevations of temperature during infancy, both acute and chronic, in the absence of any obvious cause, are often attributed to disturbed dentition. In the vast majority of instances this is not the true explanation, the real cause being some disturbance of metabolism or intestinal intoxication. There is no doubt, however, that dentition sometimes causes acute and high elevations of temperature, and it is probable that it also occasionally produces a moderate temperature of long duration. I have seen a number of these cases, of which the following are good examples:

A boy, 17 months old, began to be fussy and a little feverish the night of April 14. The next morning the temperature was 103° F.; the next day 100° F. in the morning and 104.8° F. in the evening. On the morning of the seventeenth the temperature was 100.8° F., the pulse 140 and the respiration 28. There had been no symptoms beyond the fever except restlessness and sleeplessness. Careful physical examination, including the ears, showed nothing abnormal beyond marked swelling of the gums over the first four molars. The gums were lanced over all. The temperature dropped to normal during the day and did not rise again. No other treatment was given.

A girl of three years had always had some disturbance or other while cutting her teeth, such as diarrhea, vomiting, restlessness and sleeplessness. The gums had been lanced many times with great relief. In fact, she had never cut a tooth naturally, and all the teeth had been very late in erupting. She began to be feverish the night of October 21, and complained of pain about one of the second molars. Careful physical examination showed nothing except swelling of the gum over this tooth. The mother assured me that this was the cause of the trouble, but, never having seen the child before, I doubted the accuracy of her diagnosis. The temperature continued between 100° F. and 102.5° F. for 12 days. No other symptoms developed except occasional vomiting. The physical examination continued negative except as to the gums. The urine was normal; there was no leukocytosis, the blood showed no plasmodia, the Widal test was negative. The gum was very dense and hard over the tooth. It was incised several times, each time with temporary relief of the symptoms and a drop in the temperature. Finally a large piece of the gum over the tooth was removed and the tooth came through. The temperature immediately dropped to normal and remained there, while the other symptoms ceased at once. This story was repeated with each of the other second molars, and to a less degree with the six-year-old molars, proving that dentition was the real cause of the fever.

Toxic absorption from tonsils and adenoids: The lymphoid tissue of the fauces and nasopharynx is comparatively greater in infancy and early childhood than at any other period of life, and, being functionally very active, and in process of active growth, is especially liable to disease at this age.

It is hardly necessary to speak of acute inflammations of the tonsils and adenoids, as they produce well-marked symptoms, and the cause of the fever is not at all obscure. Toxic disturbances from chronic disease of these structures are, however, very often unsuspected and overlooked. These are unusual from the tonsils in infancy, but not very uncommon in early childhood. They are fairly common, I believe, from adenoids at both ages.

When, from any cause, the orifices of the crypts of the tonsils have been obstructed, leukocytes and desquamated epithelium collect in them. The contents then become infected by bacteria, and decomposition results. The absorption of the toxic products of decomposition causes a continued fever and disturbance of the general condition. This process may occur in small as well as in large tonsils. In many cases, moreover, the orifices of the crypts are not visible, being hidden behind the pillars, and the condition is consequently easily overlooked. The rapid improvement in the general condition and the immediate subsidence of the fever after the removal of the tonsils proves the accuracy of the diagnosis in these cases.

The most marked symptoms of a mild grade of inflammation of adenoids may be disturbance of nutrition and irregular, more or less continued fever. These are almost always accompanied, however, by other symptoms of adenoids, such as frequent colds, slight snuffles, irritating cough at night and, in older children, the symptoms of the dropping of mucus into the pharynx. In these cases, also, the cause of the fever is the absorption of the toxic products of bacterial growth. The fever ceases almost immediately after the removal of the adenoids.

Otitis media: Otitis media, if not the most common, is certainly one of the most common causes of fever of obscure origin in infancy, as in many cases the fever is the only symptom outside of those of general discomfort or of indefinite pain. It is very generally overlooked because of the general misapprehension as to the symptomatology of otitis media at this age and the almost universal lack of appreciation of its frequency. Inflammation of the middle ear may cause a high temperature of short duration or a lower temperature of long duration. In some cases the temperature may be irregular and lead to the suspicion of malaria or tuberculosis. The examination of the middle ear with a speculum should never be neglected when an infant has a fever the origin of which is in doubt. It is especially indicated when there are, or have been, diseased conditions of the nose or nasopharynx present, even if these are very slight. Inflammation of the middle ear is less likely to cause confusion in childhood, as the patients are then usually old enough to complain of pain or discomfort in the ear. I have known, however, a child to refer the pain of otitis media to the elbow and another to the knee. The following cases may serve to emphasize the importance of the disease in this connection:

A girl, 13 months old, had had a slight "cold in the head" for some days. After four days she became feverish, began to cough, was drowsy and refused her food. The temperature was 103° F., the pulse 160 and the respiration 40. Physical examination was entirely negative except for slight reddening of the throat and reddening and bulging of both drums. Paracenteses were followed by a free discharge of pus from both ears and the immediate fall of the temperature to normal.

A boy, seven months old, the child of a physician, had had a temperature ranging between 100° F. and 102° F. for a week. There were no other symptoms beyond loss of appetite, weight and color, and some irritability. The physical examination was entirely negative except for reddening of both drums and a little bulging of one. Paracentesis was immediately followed by a fall of the temperature to normal.

A boy, two years old, had had a fever for three weeks, and during the last week had had several chills which were not affected by quinine. He had had no symptoms outside of those of general constitutional disturbance except a slight coryza and cough. Physical examination showed nothing beyond reddening of the throat and reddening and bulging of the right drum. Paracentesis was followed by a profuse discharge of bloody serum and a rapid fall in the temperature.

A boy, eight months old, had run a temperature between 99° F. and 104° F. for two weeks. He had had several convulsions and at times rigidity of the neck. The temperature was 101° F., the pulse 120, the respiration 60. Examination was negative except for redness of the right drum. In the hope that resolution might take place, paracentesis was not done. Spontaneous opening of the drum two days later was followed by relief of symptoms and the disappearance of the fever.

Cervical adenitis: The connection between fever and acute inflammation of the cervical lymph nodes is, of course, always recognized; that with subacute or chronic inflammation is sometimes overlooked or it is supposed that the trouble in the lymph nodes is not sufficient to account for the elevated temperature. In such cases the question always arises as to whether or not the condition is tuberculous. It is often impossible to answer this question without a tuberculin test. A general rule, which I have usually found satisfactory, is that enlargement of the cervical lymph nodes secondary to some acute inflammatory condition of the nose, mouth or throat is usually not tuberculous, even if long-continued, and that enlargement without obvious cause usually is tuberculous. It is surprising how long the temperature may continue elevated in connection with enlargement of the cervical lymph nodes, which, judging from the onset and the ultimate disappearance of the enlargement, is almost certainly non-tuberculous.

Bronchial adenitis: Much has been written as to the association of enlargement of the bronchial lymph nodes and obscure and long-continued elevation of temperature. Reasoning from the frequency with which cervical adenitis occurs in connection with inflammatory processes in the nose and throat, it is fair to assume that bronchial adenitis occurs with equal frequency in connection with like processes in the trachea, bronchi and lungs.

It also seems fair to assume that bronchial adenitis, whether tuberculous or not, may, like cervical adenitis, be associated with a long-continued elevation of temperature. It is extremely difficult to prove this, however, as all signs given as characteristic of this condition, such as dullness in the middle back and under the sternum, diminished respiration on one side, bronchial voice along the dorsal spinous processes, venous hum over the manubrium on extension of the neck, lymphocytosis and paroxysmal cough, may be present in other conditions, are frequently wanting when there is enlargement of these glands and are consequently unreliable. Radioscopic examination is more certain in its results, but is, in my experience, also unsatisfactory. In spite of the difficulty or even impossibility of proof, I am convinced that certain cases of prolonged, unexplained fever are due to bronchial adenitis, and that this is in a moderate proportion of cases non-tuberculous.

Pyelitis: Another cause of obscure fever, both acute and chronic, more common in infancy than later, is bacterial infection of the urinary tract. This is usually secondary to some other disease, especially of the gastro-enteric tract, but may apparently sometimes originate *de novo*. The invading organism is usually the colon bacillus. In some cases the urine merely contains large numbers of bacteria; usually it also contains many pus cells, often many caudate cells, not infrequently a few hyaline and fine granular casts or squamous cells. The amount of albumin is generally small and the reaction acid. Judging from the character of the sediment and the reaction of the urine, the main seat of the lesion is in the pelvis of the kidney, the renal tissue and the bladder being, as a rule, but little or not at all affected. In the vast majority of cases there is nothing whatever in the symptomatology to call attention to the urinary tract. In some cases, however, there may be a purulent deposit on the napkins, and in rare instances there is pain on micturition or rentention of urine. The diagnosis is usually first made when the urine is examined, although experience leads one to suspect this condition when the temperature is elevated without definite cause, especially after some acute enteric disease. The temperature is usually high and very irregular, the curve in many cases suggesting confined pus. In others, however, it is moderate and continued. The following cases illustrate this condition:

A girl, five and one-half months old, that had been perfectly well, suddenly became fussy and began to cry out and have a high fever. Physical examination was entirely negative except for very questionable reddening of one drum. Paracentesis was followed by no discharge and no relief of the fever and restlessness. She took her food fairly well and digested it perfectly. The temperature ran between 103° F. and 105° F. for 11 days, when it became very irregular, ranging from normal to 105° F. On one occasion there was a chill. Examination of the urine on the seventh day showed only bacteria, but on the fourteenth day it was full of pus. This was complicated by a non-purulent perinephritic inflammation requiring operation. The temperature continued elevated for two months and the urine was not entirely clear for several months more.

A boy, 20 months old and previously well, had a moderately severe attack of acute intestinal indigestion early in September, from which he quickly recovered. About the middle of September he had an infectious diarrhea from which he had practically recovered, when, on October 4, his temperature suddenly rose to 103.5° F., and micturition became painful. He retained his urine as long as possible and screamed when it was passed. The temperature ran between 99° F. and 103.5° F. The urine had stained the diapers yellow. His appetite was fair and the movements normal. Physical examination on October 6 showed nothing whatever abnormal until the urine was drawn and examined. It was found to be very turbid and to contain large shreds. It was full of pus cells, single and in clumps, but contained no casts or squamous cells.

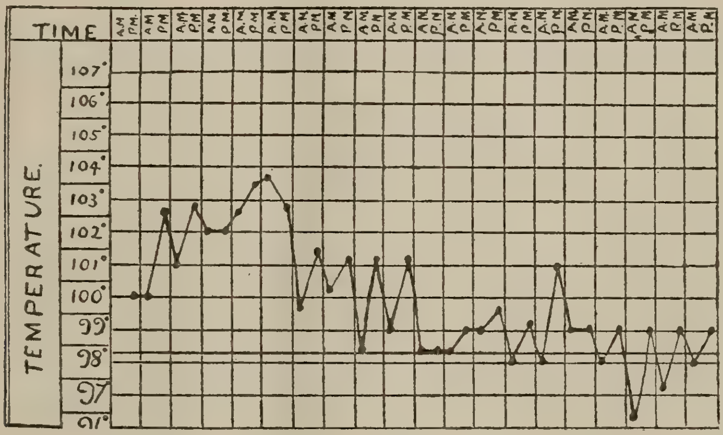
Anemia, rickets and syphilis: Anemia and rickets are often associated with fever for which there seems no very obvious cause. I am inclined to think, however, that in these diseases the temperature is not due directly to them but to the causative disturbances of digestion and metabolism which will be spoken of later.

A great deal has been written as to the importance of syphilis in the etiology of obscure fever. While this may be true in adult life and later childhood, I doubt if it cuts much of a figure in infancy and early childhood. At any rate, I have never to my knowledge met with it.

Tuberculosis: The tendency among the majority of physicians is to attribute every long-continued fever in infancy and early childhood for which it is impossible to find any plainly evident cause to hidden tuberculosis. The causes of this tendency are presumably the well-known facts that tuberculosis in early life is very prone to involve the lymph nodes primarily and to remain localized in them, and that when it becomes disseminated it progresses rapidly. In neither case are the physical signs usually definite and in many instances they are entirely wanting. When the internal lymph nodes are involved there are no signs unless they be those from pressure upon neighboring organs.

Enlargement of the tracheobronchial glands should be most easily recognized. How difficult this is has already been mentioned. The signs of acute miliary tuberculosis are usually practically *nil* in early life unless the meninges are involved, when they are, of course, usually very marked. In infancy there is a form of disseminated tuberculosis in which the number of foci is much less than in acute miliary tuberculosis and in which they have time to grow to a considerable size, becoming as large as peas or beans or even larger. These foci are, however, seldom large enough or numerous enough to give definite physical signs, and the disease manifests itself merely by a disturbance of nutrition, which is usually accompanied by an elevation of temperature. The course is a chronic one, running weeks or months. I am in the habit of speaking of this condition as chronic diffuse tuberculosis. The following case is a fair example of this type:

A girl, 18 months old, whose mother had died a year previously of pulmonary tuberculosis, was admitted to the Infants' Hospital with a history of general disturbance of nutrition with no definite symptoms whatever. The physical examination was entirely negative. The temperature curve was as follows:



She died about four weeks after admission to the hospital, and during that time showed no abnormal physical signs whatever. She took her food well, there was no vomiting, the movements were normal, there was steady loss of weight. The autopsy showed chronic tuberculosis of the bronchial and cervical lymph nodes, caseous and miliary tuberculosis of the left lung, a solitary tubercle of the cerebrum and acute tuberculous meningitis.

It is this chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes which most often cause a continued elevation of temperature without physical signs. Tuberculosis of other organs in early life usually runs such an acute course and is accompanied by such definite physical signs that it is difficult to overlook or mistake it. The diagnosis of chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes during life is always difficult and often impossible without the aid of the tuberculin test in some form. In cases in which the tuberculin test is inadvisable the presence of a fluctuating opsonic index may be of great value in diagnosis. A history of definite exposure to tuberculosis is also of great assistance in diagnosis. The absence of such a history does not, of course, in any way rule out tuberculosis.

Judging from the frequency with which tuberculosis is found at autopsy in childhood, and from the number of healed tuberculous foci found in later life, it would seem probable that a large proportion of the obscure fevers of infancy and early childhood are due to tuberculosis. My experience leads me to believe, however, that hidden tuberculosis is comparatively seldom the cause of continued elevation of temperature in early childhood, and that in the majority of cases in which the fever is supposed to be tuberculous in origin, it really is due to disturbances of digestion or metabolism. The explanation of this comparative infrequency of tuberculosis as a cause of obscure fever in infancy and early childhood is presumably that at this period of life tuberculosis tends to dissemination and a rapidly fatal course. Chronic latent cases are consequently relatively rare.

Intestinal Toxemia or Autointoxication: It is well known that the intestinal contents are toxic under normal conditions and that under certain pathological conditions the toxins produced by the bacterial fermentation of foods in the intestinal canal greatly increase this toxicity. The poisonous albumoses, which are the intermediate bodies formed in the digestion of albuminous foodstuffs, probably contribute more to the toxicity of the intestinal contents than do the products of carbohydrate or fat digestion. Bacterial fermentation is, however, the chief source of the intestinal toxins. These may come from the bodies of dead bacteria, be the excretions of living bacteria in the intestinal canal or be substances produced by bacteria from the culture media. The last are probably the most important. Under normal conditions these substances are robbed of their toxicity in their passage through the intestinal epithelium and liver cells. These protective organisms are not as strong in infancy and early childhood as they are later. It is important to remember the important rôle which the liver plays in protecting the body against intestinal toxins. They can reach the general circulation only by passing through the liver. In their passage they are, under normal conditions, rendered harmless. The liver thus protects the general circulation. In some instances, however, the liver itself is at fault. This function of the liver is also probably not as well developed in early life as later. The intestinal secretions are also probably not as abundant or as active in infancy and early childhood as later. For these reasons the infant and young child is more exposed to and less able to resist auto-intoxication than are older children and adults. In infancy and early childhood, moreover, on account of the immaturity and irritability of the nervous system, a small quantity of poison which in later life would cause few or no symptoms may produce very severe ones. Acute intestinal toxemia is especially common, therefore, at this age. As the child grows older and the nervous system more resistant, the acute intoxications become less important and the chronic more.

The accurate diagnosis of intestinal auto-intoxication on a chemical basis is not an easy one. It is impossible to tell much from the examination of the stools. They show merely the amount of putrefaction, nothing as to the amount of auto-intoxication. They show nothing as to what part of the toxemia is due to abnormal digestion and what to bacterial putrefaction. Among other bodies produced by bacterial action on the intestinal contents are various aromatic bodies, such as the phenols and indols. These are probably not the true toxic bodies, but are formed parallel with them and can thus serve as an index of them. These are eliminated in the urine, chiefly in the form of indican and the ethereal sulphates. An excess of these substances in the urine is, therefore, valuable evidence of intestinal auto-intoxication. The absence of an increase in them does not, however, rule out intestinal auto-intoxication.

Acute elevations of temperature, due to intestinal toxemia, in infancy and early childhood seldom cause trouble in diagnosis, as they are almost always accompanied by marked symptoms, such as vomiting, diarrhea or obstinate constipation. In some instances, however, these symptoms may be so slight as to apparently not account for the fever. The following case is an example:

A girl of two years convalescing from whooping-cough had been indiscreetly fed for some months. Three weeks before, after eating cucumbers, ice cream and baked beans, she had vomited and had a temperature of 104° F. After catharsis and irrigation of the bowels the temperature dropped to 101° F., where it remained for several days, and then without any indiscretion in diet rose again to 105° F. It dropped again after catharsis and irrigation of the colon, but rose again in a few days, and so on. The diet had been peptonized milk. There had been no vomiting. The bowels had moved once or twice daily and the movements had been yellow, but with much mucus and foul odor. The whooping-cough was slight and the lungs remained clear. The physician in charge feared that he had overlooked some other cause for the fever, as the intestinal disturbance hardly seemed sufficient to account for it. Careful physical examination, including the ears and the urine, failed to find anything abnormal, however, and with time, careful feeding, laxatives and irrigations the temperature finally dropped to normal after several weeks and remained there. Nothing outside of the intestinal condition was ever found to account for the fever.

Davy and Smith have both described cases of high temperature in children coming on rapidly and lasting a number of days as the result of the ingestion of an excess of carbohydrates, especially if improperly cooked. In them the fever was entirely out of proportion to the evidences of indigestion. They consider that the fever is due to the absorption of the toxic products resulting from abnormal fermentation of the carbohydrate food. They recommend as treatment the restriction of carbohydrate foods and advise a diet of meat, fish and green vegetables. They also think that milk is to be avoided in these cases. Cases of this sort, due sometimes to an excess of carbohydrates, especially in the form of sweets, and sometimes to the improper cooking of starchy foods, are, I think, not uncommon. In these cases the temperature is often out of proportion to the symptoms of intestinal irritation and may, therefore, draw the attention away from the intestinal tract. The prompt response to catharsis and restricted diet proves, however, the nature of the disease. Personally I think that milk is most useful and not to be feared in these cases. The sugars have to be in many cases practically eliminated from the diet, while the starches may be given in reasonable amounts provided they are properly cooked.

Long-continued elevations of temperature without very evident cause in infancy and early childhood are certainly very often, and, in my opinion, probably most often, due to a mild grade of intestinal toxemia. The temperature is usually not very high, and is often normal in the morning. In some cases it may run for weeks or months with practically no intermissions. In others it is intermittent, being elevated for days or weeks at a time, then normal for days or weeks, and so on. In most instances the general condition is more or less impaired, but in others the appearance is that of robust health. In many instances there are symptoms of disorder of the digestive tract, such as anorexia, occasional headache, slight flatulence, occasional vomiting, constipation or more or less undigested movements. These symptoms are often intermittent while the temperature is constant. In others, however, these symptoms are often overlooked by the parents and can be elicited only by the most careful and minute questioning and attention to details. A capricious appetite, relative constipation, although the bowels move regularly, or an occasional undigested movement are not infrequently the only symptoms discoverable. In other instances even the most careful investigation fails to find any symptoms of this sort, and yet the temperature yields to regulation of the diet. Neurotic children and the children of neurotic parents are more subject to these elevations of temperature than others. The following case is an example of long-continued fever due to intestinal toxemia:

A boy, 14 months old, the child of a physician, had been injudiciously and very much over-fed. The temperature had been taken regularly for the last five weeks. It had been normal but twice, but it had never gone over 100° F. His appetite was fair. There was no nausea or vomiting. His bowels moved daily. The movements were smooth, the first part constipated, the rest not. There was some mucus and the odor was foul. He was very active and seemed well except for the fever. The physical examination was entirely negative. He was put on milk and starches and the bowels kept slightly relaxed with milk of magnesia. He continued to have a slight fever for about three months, after which it ceased. He had no symptoms during this time except an occasional undigested movement, appeared well and active and gained in weight.

All agree that intestinal toxemia is especially likely to occur in children who are over-fed or improperly fed, and that it is especially likely to develop in warm weather when the digestive powers are enfeebled by the heat and when bacterial infection of the food is more common. All agree, also, that lack of fresh air, sunlight and exercise are important predisposing factors. There is considerable difference of opinion, however, as to what element or elements in the food are most likely to favor the development of this condition. Some believe it is the proteids, others the carbohydrates, and still others the fats. Certain others believe that milk is usually at the bottom of the trouble, while others attribute it to the fat in the milk. My own experience leads me to believe that in the majority of the chronic cases there is decomposition of the proteids and that the symptoms are comparatively seldom due to an excess of carbohydrates. Such cases usually yield fairly promptly to a milk and starchy diet combined with proper hygiene and mild laxatives.

The object of the milk and starchy diet is to change the intestinal culture medium and to thus modify the intestinal flora. Disinfection of the intestine is impossible; sterilization of the food is of little or no value. The carbohydrate diet, however, furnishes a medium on which the putrefactive bacteria do not thrive, favors the growth of antagonistic bacteria and thus diminishes the proteid putrefaction and intestinal auto-intoxication. Buttermilk is often useful in these cases for the same reason. Tissier and others have even given cultures of Bacillus acidi paralactici in acute cases of this sort with good results.

I have seen, however, a number of children in which long-continued fever was associated with some of the symptoms of what I am in the habit of calling chronic duodenal indigestion, namely, a tendency to hard and white, or to soft, clay-colored stools, sometimes associated with mucus. Many of these children have also had occasional attacks of acute duodenal indigestion, with vomiting of bile, slight jaundice and acute exacerbations of temperature. Some of them have had a continued fever for months, and several of them intermittently for years. The trouble in these cases is presumably an inability to digest fats and to a less extent carbohydrates, especially sugars. In this class of cases a long-continued diet of proteids, such as skim milk, white of egg and lean meat, with a small amount of starch and fruit, and in older children green vegetables, has given the best results. Here, too, hygiene, fresh air, sunlight, exercise and freedom from nervous strain are of great importance. The treatment in this class of cases must be long-continued for relapses are common.

Several of the patients belonging to the class just described have had attacks of recurrent vomiting apparently due to acid intoxication. At any rate, the acetone bodies have been present in the breath or urine immediately before or at the onset of the attacks. This suggests still more that in this class of cases the chief fault lies in the digestion of the fats. It also suggests even more strongly that in this class of cases, and very probably in others also, there are obscure disturbances of metabolism of which we have no comprehension, as well as intestinal auto-intoxication. It is very possible, moreover, that these disturbances of metabolism may play a greater part in the etiology of the obscure elevations of temperature apparently associated with disturbances in the digestive tract than the absorption of intestinal toxins. It also reminds us how little we really know and how much we have to learn about these matters.

Certain authors, as already mentioned, believe that in many instances continued fever in infancy and early childhood in connection with disturbance of the digestive tract is due directly to milk, the milk, in their opinion, acting in some way as a poison. Personally, I believe that such cases occur, but much less commonly than is often supposed. I doubt very much the existence of a congenital idiosyncrasy to cows' milk, but feel very sure that such an idiosyncrasy may be temporarily developed. It is very probable that in such cases there is a lesion of the intestinal wall, allowing the passage of the heterogeneous albumen, as it seems hardly possible that the almost immediate elevations of temperature following the ingestion of small amounts of milk can be due to the decomposition of the milk by bacterial action and the absorption of toxins.

While I have seen many cases of indigestion, both gastric and intestinal, some of which were accompanied by fever, which were undoubtedly due to an excess of fat in the milk mixtures, I cannot agree with those authors who believe that it is always the fat in the milk which is accountable for the elevation of temperature in this class of cases. The reason I cannot agree with them is that I have seen skim milk, whey and buttermilk cause the same elevations of temperature in these patients as whole milk or cream, the presence or absence or amount of fat making no difference whatever. In these cases it is milk as milk which causes the trouble and not any especial constituent of the milk, unless it may be that it is the heterogeneous albumen which it contains which acts as a poison. The following cases are examples of those in which the ingestion of milk is accompanied by a rise of temperature:

A girl, eight months old, had had repeated slight attacks of indigestion, both gastric and intestinal, for three months. Previous to this time she had been on the ordinary diet for a child of her age, but since then had had only milk and barley water and broth. The last two weeks she had been running a temperature between 99° F. and 101° F., had been very irritable, taken her food poorly and had had three or four watery, yellow, foul movements, containing curds, daily. Physical examination was entirely negative except that she was flabby and a little pale. All milk was stopped and she was put on cereals, beef juice and broth. Improvement was almost immediate, the appetite returned, the movements dropped to one a day and were normal in character, the irritability ceased and the temperature dropped to normal. After a week two ounces of milk were added to each feeding of barley water. Within 12 hours the temperature was up again and all the symptoms had returned. The mother could not believe that the trouble was the milk and kept on with it for a week, although the fever and other symptoms persisted. The milk was again stopped, with, as before, an immediate cessation of the fever and other symptoms. It was several months before she was able to take milk.

A boy that had been well except for moderate indigestion in the early months had been decidedly overfed during his tenth month, the milk being very rich in fat. Loss of weight, vomiting and undigested movements were the results. Directions as to feeding were not followed during the next few months, except spasmodically, so that when he was 14 months old his condition was a serious one. He had lost much strength, weight and color, was very irritable, had four or five undigested, foul movements with mucus daily, and ran a temperature between 99.5° F. and 100° F. Physical examination was negative except for distension of the abdomen and slight signs of rickets. During the next three months he was under the care of a trained nurse and all directions were carefully followed. Milk in some form, whey, skim milk and whole milk, but never cream, always formed a part of his diet. He gained considerably in strength and color and a little in weight, but was very peevish and constantly ran a temperature between 99.5° F. and 101° F., and continued to have several very large, loose, undigested, but extremely foul movements daily. Milk in every form was then cut out. Improvement was almost immediate. The foul odor of the movements ceased after a few days, and the temperature dropped to normal in about a week and remained there. Three months later he was able to take a little milk without being upset, but even after six months, when two years old, he could not take more than eight ounces a day without a return of the fever and the foul odor of the movements.

Finally, there is a class of cases of continued fever in infancy and early childhood in which the most careful examination fails to find any cause for the fever, in which no modification of the diet is of any avail and in which the general condition is unaffected, the child being apparently well and gaining normally in weight. The temperature may remain elevated for many weeks or even months in such cases and finally cease without any cause for it having been discovered. The most reasonable explanation of the fever in these cases is, it seems to me, some obscure disturbance of metabolism. The following case is an example:

A girl of two years had a slight cold lasting about a week. The temperature, which was first taken during the cold, did not drop when the child recovered, but continued elevated. To make a long story short, it ranged between 100° F. and 101° F. in the morning and 102° F. and 104° F. in the afternoon for 11 months, finally coming slowly down to normal and remaining there. During this time she appeared perfectly well in every way and gained steadily in weight and height. Repeated physical examinations failed to show anything abnormal. The urine was always normal and the blood never showed any parasites or abnormalities in the number of red or white corpuscles. She is now, four years later, an exceptionally large, strong and healthy girl.

Such cases justify the conclusion that if a careful study and thorough examination of the child does not reveal the cause of the fever, there is, in the vast majority of cases, nothing serious the matter and no cause for anxiety.

Hypertrophied Faucial Tonsils and Adenoids an Etiologic Factor in Backward Children

BY H. B. ORMSBY, M. D.

Every physician will readily concede the fact that there is no other single condition, with perhaps the exception of heredity, that plays so great a part in retarding the normal growth and development, both mentally and physically, of the infant and young child, as does hypertrophy of the faucial tonsils and adenoids. This fact is so universally recognized that I feel an apology is due my hearers for asking your attention to a paper of this character. Yet the subject is of such vital importance that much good may come from a free discussion of it at this time, and possibly, by this means, we may be able to influence some of our fellow practitioners to be on the lookout for adenoids in infants, even when the tonsils are not enlarged.

That adenoids very often exist without enlarged tonsils is not universally recognized. Snuffles are too often attributed to colds or lues, but if we should examine the fauces of the child that has a cold in its head, in the great majority of cases we will find that the child has adenoids. When we do find them we ought not to temporize with sprays and washes, but should advise their removal with the curette. A general anesthetic is not usually necessary. A few strokes of the hand will quickly clear

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Read before the Clinical and Pathological Section of the Cleveland Academy of Medicine, June 5, 1908 the posterior nares. The hemorrhage is not profuse and the next day the snuffles and cold in the head are gone.

F. B. Sprague, of Providence, R. I., in a paper read at a meeting of the New England Otological and Laryngological Society, January 19, 1906, said: "The relation of this subject to the family doctor is of great importance. There is yet a remnant of the generation of doctors who, ignorant of the irreparable damage done to the mouth, throat and delicate structures of the ear during the years of the growing child, discourage operation, advising that the child will outgrow the trouble. It is within the special domain of the family physician to advise and direct the care of children in such a manner that they will grow up vigorous and healthy offspring, with prospects of having a healthy state physically, mentally and morally, and become useful members of society."

We must teach the parents that if there is any difficulty in breathing during the first few weeks or months of infant life they must consult the family physician. We must also teach them that the normal child nurses well, sleeps well, increases steadily in weight, and is not fretful either in its waking or sleeping hours, and we must impress upon the mind of the parents that when the child has these abnormal conditions it is more susceptible to contagious diseases and that its vitality will become markedly impaired, thereby making it more liable to contract the infectious diseases, such as tuberculosis, typhoid fever and intestinal disturbances.

When we explain to the parents that a general anesthetic is not necessary (this being the greatest dread to them), that it takes only a moment, that the child will not be confined to bed, that it will surely sleep better, eat better, and develop faster in every way from the moment it is operated upon, then not one parent in fifty will still oppose the operation.

In 1905, the Health Department of New York began a systematic examination of all school children. These examinations were especially for defective hearing, vision and diseases of the respiratory organs. Nearly 70% of these children possessed abnormalities which could be easily corrected, but which, if neglected, would make them fit subjects for institutions for defectives and delinquents. In one school alone about 90 were operated upon for enlarged tonsils and adenoids. It is a noteworthy fact that this was a special school for backward children, and a report from 80 of them, two years later, showed that they had done better school work in the subsequent six months than they had been able to do in two years previous to the operation. It goes without saying that had not this inspection been carried on, and had nothing been done for those children, they would have been unfitted for study or any important position in after life, whereas now they will become valuable members of their respective communities. Many of these children had defective noses and throats from early infancy and little attention was paid to them then. When these children became old enough to enter school they did not learn as normal children, but seemed lazy, dull, stupid, obstinate and rebellious, necessitating their removal to a special school for backward children. Here the true condition was discovered and corrected with the miraculous result stated.

In such a systematic examination of school children, diseased noses and throats would not be the only abnormal conditions found. It would be discovered that a great percentage of the children had defective eyesight, impaired hearing, deformed chests, poor digestion, wrecked nervous systems, rheumatism, rickets, and were slow to learn, etc.

Some parents argue that they themselves had enlarged tonsils and outgrew them, while, as a matter of fact, they did not outgrow them but the relief derived as years advanced was due to the growth of the pharynx rather than the atrophy of the gland. In many cases of enlarged tonsils and of adenoids a true fibrosis exists, and when a true fibrosis does supervene atrophy seldom if ever takes place, and the condition consequently persists until corrected by operation.

Burkett, of Montreal, reports that out of 10,000 patients complaining of nose, throat or ear symptoms, 1,605 were suffering from enlarged tonsils or adenoids. Chappell reports that out of 2,000 New York school children, 30% possessed adenoids. A routine inspection of school children in Cleveland, where the atmospheric conditions are favorable for catarrhal troubles, would, I am sure, show a much larger percentage of children possessing adenoids and enlarged tonsils.

Before considering in detail the general symptomatology of enlarged tonsils and adenoids it may be well to refer to the anatomy of the throat in infancy and childhood. The nasopharynx, a long narrow passage running obliquely backward and downward from the posterior nares, is nearly as large anteroposteriorly as in adult life, but the soft palate is somewhat lower.

The nasal cavity is large and shallow at birth, so that respiration is not, in a normal condition, as free as in adult life. The posterior openings are usually about as large as a medium sized male catheter. These openings double in size the first six months, then remain nearly stationary the next two years. Opening into the anterior and lower portion of the lateral wall of the nasopharynx opposite the posterior termination of the lower turbinated bones, on either side are the Eustachian tubes. In the upper central portion of the pharyngeal vault there is a crowding together of a large number of glands into a distinct mass. This mass is known as the pharyngeal or third tonsil, first described by Luschka, and sometimes called Luschka's tonsil. This structure is always present in this region, but, of course, in different degrees of development. When diseased it covers the roof and posterior wall of the nasopharynx, covering the whole extent of the occipital bone and constituting a serious obstruction to the free passage of air, with a resultant menace to good health. The nasopharynx derives its arterial supply from the ascending palatine branch of the facial, the ascending pharyngeal branch of the external carotid and palatine and sphenopalatine branches of the internal maxillary. The internal jugular receives the venous supply. The nerve supply is derived from the second division of the fifth, and from branches of the glossopharyngeal and vagus. The mucous membrane is covered with columnar ciliated epithelium, which, together with the extensive glandular structures of this region secreting an abundant supply of mucus, facilitates the free passage of food to the esophagus.

Etiology: Enlarged tonsils and adenoids are diseases of childhood and young adult life. In many instances the condition will subside as the child reaches maturity, but in waiting for that time to come irreparable damage may be done, and many of the most important years of the child's life lost, for it is during these years that the foundation of the child's future health is begun. This general predisposition to enlarged tonsils and adenoids in childhood is probably due to the high activity of the epithelial and lymphatic structures, that is, a child seems to possess a lymphatic temperament so that, when kept in too close quarters, or when there is not sufficient fresh air in the sleeping room, it gets a marked congestion of the mucous membrane of the air passages as soon as it is taken out of doors. This being often repeated produces a swelling of the mucous membrane and lymphatics, with a resultant obstruction to the free passage of air, and still later a true pathologic condition of all the structures in the nasopharynx.

Heredity, diphtheria, scarlet fever, measles and other debilitating systemic diseases play an important role in the etiology of enlarged tonsils and adenoids, but many of the other pathologic conditions are secondary to the abnormal throat condition, as will be shown later.

Symptomatology: The first and probably one of the most troublesome symptoms of these growths is the excessive secretion of mucus in the posterior nares. Who of us has not seen any number of children, especially among the neglected classes, their posterior nares completely blocked by this mucus, and large quantities draining from their anterior nares, producing a very repulsive condition of the face to say the least? This mucus forms hard crusts, which further obstruct the child's breathing, and also prevent the secretion from dropping directly into the lower throat, where it would do little harm. Instead it is retained in the nose, degenerates into mucopus, becomes highly infected by pathologic organisms from the atmosphere and eventually lodges in the crypts and fissures of the nasopharynx, becoming a hotbed for the further development of disease germs. Finally it passes on into the stomach or lungs, where the organisms multiply still more rapidly, until we have a chronic gastritis, acute tuberculosis or intestinal infection to deal with. The child with this condition now develops an altered voice, a "nasal twang," that is, the child is said to talk through its nose, as if it had a "cold in its head," whereas, in fact, the voice becomes so because the child *cannot* talk through its nose. A parent will often bring forward the objection to operation that: "the child will never be able to sing as well if the tonsils are cut." They do not understand that the abnormal condition will do that very thing unless corrected and that we aim by operation to put the throat and nose back into the same condition that nature intended it to be. No normal structures are removed, only those that are diseased and so swollen that they act as foreign bodies and prevent the child from singing and talking clearly. This obstruction to free breathing soon produces a peculiar facial expression characteristic of adenoids. The child develops drooping eyelids, broadening of the nose, dropping of the lower jaw and lip. In fact all the bones and muscles of the face fall into disuse, and produce a vacant semi-idiotic expression, so that all who come in contact with the child think that it is not possessed of all its wits.

Phillip D. Kernson, in the *New York Medical Journal* of April 21, 1896, says: "One of the most interesting problems in medicine today is the possible prevention of aural diseases in adult life, by removal of the causes in early childhood. That not infrequently the first intimation the parents have of the auditory defect of these children is the difficulty experienced in keeping abreast with classmates at school. Almost invariably there is a history of difficult respiration, mouth breathing or snoring."

Of 50 children examined in Dr Wright's clinic, faucial tonsils were enlarged in all but eight, and of these 50 children, 45 showed evidences of aural disease. It is universally acknowledged by the medical profession that the dominant factor in middle ear disease is infection, and this infection could come from no other source than through the Eustachian tubes, with the possible exception of metastasis, as in systemic diseases.

Clarence Blake declares adenoids responsible for 88% of deafness.

McKenzie claims that the discovery of adenoids has saved thousands of cases of deafness every year. At the Central London Throat, Nose and Ear Hospital every child with aural disease is submitted to adenectomy.

Streptococci and pneumococci are almost always the exciting causes of middle ear diseases. So virulent are these organisms that the entire mastoid is often destroyed in 48 hours and many operators feel justified in opening the mastoid as soon as these organisms are found in the aural discharge.

In January of this year I operated upon N. W., aet. nine years, also his sister, R. W., aet. six years, both of whom had defective hearing. The brother was markedly deaf, and frequently during the past three years I had urged operation. The parents did not consent until the sister began to get deaf, and I had shown them that she possessed the same abnormalities of the nasopharynx that her brother had. They then consented to an operation, with the result that the hearing of both rapidly returned to the normal.

In 1901 Mrs. L. consulted me as to why her boy was so restless at night. He would throw himself about, kick the covering off, perspire profusely, snore and have night-terrors. Upon examining the throat I found the tonsils enormously enlarged, the posterior nares almost completely blocked with adenoids and a general systemic debility. I operated upon him with a resultant cessation of all the symptoms and a rapid return to good health.

Ten months later the mother came to my office and said: "Doctor we want you to come and operate upon the baby. He acts in his sleep just as Eddie did before you operated upon him." This baby was then 13 months old. As I entered the house the next morning, prepared to operate, I could hear the child breathe from a distance of two rooms away, but when I went to see him the next morning, I was compelled to put my ear quite close to his face to hear him breathe at all. There are many other cases I could report, which showed as marked improvement, but time is limited.

A chronic cough of greater or less severity is a fairly constant symptom of enlarged tonsils and adenoids. City air is nearly always laden with dust particles and these would be sifted out by the hairs in the nose, if the nasal passage were patulous. When the dust is breathed through the mouth it is deposited upon the delicate epithelial lining of the bronchial tubes, later infecting the lungs. One of the most important functions of the mucous membrane of the nares is to render the air humid as it passes to the lungs, but when the air is breathed in through the mouth, it extracts the natural moisture of the larynx trachea and bronchi, keeping the mucous membrane dry and irritated and producing a dry, rasping cough, with its consequent debilitating influence upon the general health and resultant reflex nervous symptoms. It may now be easily seen how readily a tuberculous infection may take place. It is a well established fact that many tuberculous patients state that the trouble was preceded by a chronic catarrhal inflammation of the throat and nares. One patient in my own practise had suffered from chronic catarrh for years which eventually developed into tuberculosis. There is no question in my mind but that this man would never have had tuberculosis had his nasopharynx been in a normal condition.

The time is not far away when we shall consider tuberculosis a rare disease, because we now teach the laity the early signs of the disease, and the means of prevention. We teach the parents that many children are born with conditions which, unless corrected, will produce such invalidism as will wreck their happiness, and possibly necessitate their being sent to public institutions for the blind, deaf or feeble minded.

E. H. White (*American Journal of Medical Sciences,* August, 1907) summarizes his study in 75 cases of adenoids, with especial reference to tuberculosis. In five there were histologic evidences of tuberculosis. In four of these five, the disease was primary in the adenoids, making a percentage of 5.3. He quotes McBride and Turner as finding 3%, Dreulafar 20%, Pludar and Fisher 15%, Nicholl and Latugan 16%, Wood, out of 1675 cases, 5%. He advises operation in all cases of primary tuberculous infection of the adenoids with a favorable prognosis as to cure. Watson Cheyne (*British Medical Journal,* February, 1899) reports that out of 27 autopsies on subjects that had died of pulmonary tuberculosis, 26 had involvement of the cervical glands. It could not be determined where the primary infection took place, but no doubt in not a few it was in the throat, the infection in the glands and lungs being secondary. So that in all cases of cervical adenitis the nasopharynx should be first examined. If adenoids are found, the first step in the treatment of the adenitis should be the removal of the adenoids as a probable source of the primary infection.

Exophthalmic goiter is not an infrequent result of enlarged tonsils and adenoids. In 1899, I removed the tonsils and adenoids in a little girl 10 years old, who had a large goiter but not the exophthalmic type. Six months after the operation the goiter had entirely disappeared.

W. H. Wingram (*Lancet,* December, 1903) reports a case of a man 21 years of age, who complained of persistent redness and enlargement of the nose. He was of temperate habits, used tobacco only moderately, there was no marked obstruction to breathing, but the supranasal vein was varicosed and very prominent. Anterior rhinoscopy revealed no abnormalities, but posterior rhinoscopy and palpation with the finger revealed a large mass of adenoids. Their removal was soon followed by the disappearance of the varicosity of the supranasal vein, and of the hypertrophy of the nose. The cure was complete and permanent.

Diagnosis: Kernson says that: "Bilateral retraction of the drum membranes in a child of 10 years or less is pathognomonic of one condition only, viz., nasopharyngeal obstruction." This retraction is seldom discovered until later in life, then the patient remains chronically deaf.

The catarrhal discharge, the facial expression and a history of disturbed sleep will usually enable us to make a diagnosis. This may be confirmed by posterior rhinoscopy and the finger. Very soon after operation the child feels so much better that it seems as if nature was delighted to get rid of the offending material. The child acts as if a great burden had been lifted from its shoulders, the flesh becomes pink and firm, the eyes regain their lustre, the face assumes a happy, intelligent expression, hearing becomes more acute, the child sleeps better, eats better, learns more rapidly and grows faster.

Hypertrophic and atrophic rhinitis, headache, asthma, epistaxis, nightmare, night-sweats, convulsions, rickets, anemia, pigeon-breast, round shoulders, pallor, vertigo, sneezing, loss of smell and taste, aphonia, salivation, stammering, enuresis, chorea, rheumatism, heart disease and indigestion are common sequelæ. Surely there is no other act that we can do in our professional capacity that wins such praise and gratitude from the parents of these little ones as the removal of diseased adenoids and tonsils.

532 Rose Building.

Types of Paranoia

By H. H. DRYSDALE, M. D., Cleveland, Ohio

Paranoia is a chronic form of mental derangement characterized by an elaborate system of fixed delusive conceptions unaccompanied by any disturbance of the logical or syllogistic faculties. In tracing the development of the malady a morbid heredity will be found in almost every case. Krafft-Ebing has never seen a paranoiac free from neuropathic or psychopathic taint. Many of these cases present anthropologic degenerative stigmata. The disease preeminently is a disorder of the intellect and the false ideas that completely dominate the subject have their origin in the emotive nucleus. In the evolution of the personality, the fundamental emotions, ambition, pride, suspicion and fear, shape the order of thought and action but when their development exceeds the normal measure of intensity, they exercise complete dominion over the mental patrimony, disturbing the perceptive and associative functions and provoking a current of thought unrelated to reality. From this cause reason is dethroned and the subject throws himself without consideration into ruinous undertakings, indulges in a line of conduct that is mystic and incoherent and becomes a firm believer in the world of chimeras.

In years gone by paranoia was erroneously known as "reasoning insanity" from the fact that most of these patients are able to conceal cunningly their delusions and defend their

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Read before the Clinical and Pathological Section of the Cleveland Academy of Medicine, June 5, 1908 false positions in an aggressive and argumentative manner. In England the term "monomania" is popular but Clouston admits that few if any individuals are controlled by one delusion and that alone. Most writers trace the disease through four distinct stages, viz:

1. The period of inquietude (subjective analysis).
2. The period of delusional explication (persecutory stage).
3. The expansive period (transformation of personality).
4. The period of mental enfeeblement (pseudodementia).

The prodromata of paranoia frequently have their conception in childhood. In recording the history of these cases it is surprising how often they are described as having been peculiar from childhood. As a rule they are impulsive, perverse and preoccupied with every trifle especially so with their health. Sexual precocity is not uncommon, some are addicted to onanism while others may be particularly studious along limited lines. Many seek solitude and have little of the natural joyousness of early youth. The stress of puberty with its inflow of innumerable new sensations tends to precipitate the morbid phenomena already existing. The subject becomes markedly introspective, worries over his inability to concentrate his thoughts and attempts to analyze his strange feelings. In despair he grows suspicious, irritable and distrustful. Everything he sees and hears is perverted and at last fixed delusions and hallucinations control him.

He now arrives at the second stage of his progressive malady, the period of delusive explication. All the distress he has suffered has been due to the machinations of presumed enemies, who, from his point of view, have entered into a conspiracy against him. He attempts to discover their identity but the search is futile. Insults are hurled at him from every side. He hears it night and day, on the streets, under the floors and above the ceilings. Every sound warns him of impending danger. If he goes to church the preacher indirectly refers to him, if he attends the theatre some character is mimicking him and if he reads the daily papers he finds in some story an allusion to himself. Wherever he goes, in the city or out of it, the same persecution exists. He has no rest and cannot escape it. In many instances he will seek protection by the police or others high in authority. In Washington every precaution is exercised to prevent these inflamed individuals from securing interviews with the President. Many a Cleveland officer has been footsore and weary chasing rainbows the result of the paranoiac delirium.

If, as sometimes happens, the victim fixes the identity of his persecution upon some innocent person he will seek revenge through legal channels and failing in this may take the matter into his own hands and impulsively accomplish his vendetta on the slightest provocation. These patients when homicidal are ferocious and remorseless. A few cases, timid in temperament and seeing no avenue of escape, may develop suicidal tendencies and destroy themselves. For years this torment may continue and to avoid it the sufferer will wander over the entire world or he may become a hermit and live a misanthrope. On the other hand, his trouble may subside for a while and comparative peace reign in his agitated and harrassed mind. This respite, however, in the majority of cases is only temporary and he again becomes a persecuted individual in the truest sense of the term.

The onset of the expansive period may be sudden or gradual. Awakening in the morning he may announce the discovery of his bitter and protracted conspiracy. It is because of his superiority and importance and, from his egoistic standpoint, it is perfectly natural that the world envies and hates him. A complete change of personality occurs and he assumes a demeanor in harmony with his exalted estate. Now he is buoyant and self-satisfied. What the content of his future delusions will be depends very much upon his inherited temperament and the nature of the ideas that have been germinating in his mind from early youth. They usually partake of a religious, erotic, litigious or persecutory character and it is a brief outline of these types I desire to present.

Observation 52 (Paranoia religiosa). I. N., aet. 59, American, married, mechanic, has resided in Cleveland 35 years. Mother and sister insane. (Seen in consultation with Dr W. C. Warner.)

This patient I take it has always been a mystic megalomaniac and has passed through a period of asceticism. He freely admits having early developed a tormenting ambition to become the "Redeemer of the Universe" but it was not until 1885 that God ordained him as his "Disciple on Earth." He did not see God but heard his voice as he has many times since. Starting out at once to assert his authority he became actively interested in religious affairs and attended church regularly. He did not, however, receive the respect and reverence to which his exalted position entitled him and he found many who opposed and ridiculed him. Those who refused to accept his doctrines he brazenly condemned as pusillanimous and incapable of understanding. His pastor and family endeavored by all manner of means to show him the falsity of his ideation but in this he saw an attempt to usurp his power and became threatening and homicidal. It was necessary at this time (now over 20 years ago) to commit him to the Cleveland State Hospital. In relating his experience at the hospital the patient states: "God admonished me on this occasion to be faithful and strong in the Lord as the world was ever too eager to persecute those heavenly endowed. One day the superintendent subjected me to a rigid examination and took my case under advisement. When he reached his decision he frankly informed me that I was too important a personage to be confined and I was permitted to leave the institution." It seems that this patient improved at the hospital and was able to return to his work. During these 20 years he has been steadily employed by one concern and has provided for his family. At the same time he has continued in his religious activity in the church, at his work shop and from the porch of his home. His fellow workmen and neighbors have long ago branded him as a religious crank. Lately he has grown excitable and subject to accessions of anger which his family and friends are unable to pacify. He is now intensely delusional and insists that he alone is the "Elect of God" and must be accepted as such.

Through his divine power he is able to inform the world that in 1910 will come the universal cataclysm. He is restless, determined and boisterous and it was necessary to send him to a suitable institution.

Observation 67 (Paranoia erotica). Mary T., aet. 45, American, born in Buffalo, married, collector and book agent, has resided in Cleveland about four years. Little is known of her family history and in this respect she is particularly reticent. From a local parish priest it was learned that she is an outcast of a prominent Buffalo family.

The circumstance that induced the police to make complaint of insanity against this woman was the fact that she persisted, night after night, in hanging around the home and peeping through the windows of a prominent Cleveland attorney with whom she was enamored. For over two years she has been known to the police who have frequently been called to protect her from imaginary enemies. On one occasion she summoned an officer to her house in the middle of the night claiming that her persecutors were on the roof and planning to kill her.

This woman is corpulent, robust and uncomely. Her physical condition is good and she presents no evidence of organic nervous disease. The reflexes are all of normal intensity. She asserts that the persecution she has suffered so long was engendered by girl schoolmates in Buffalo who were extremely jealous of her many accomplishments. They made life hideous for her and to get away from the annoyance she suddenly and secretly departed for the West. Arriving in Denver she endeavored to secure a position but the people were warned in advance and little success came to her. Several cities were visited with the same result. Everywhere she went people scorned her and even the police were bribed to enter the conspiracy. In desperation she came to Cleveland, arriving at night to avoid recognition. In this she was successful for three days when, upon entering an elevator to go to a certain office, she heard a group of women referring to her as a devil and an old witch. Since that time they have followed her night and day and she cannot escape them. As to her love affairs, the recital of which gives her great pleasure, she states that prominent men all over the country have proposed marriage but were deterred for fear of their lives. She emphatically considers herself a born enchanter, bewitcher and fascinator. Fom her point of view this Cleveland attorney is madly in love with her and she continually hears his voice calling her to him. She is afraid to go and at present they communicate through an infallible code of love. It may be said that this reluctant "legal lover" has no knowledge of the woman whatever. She called at his office once relative to the collection of some account and in the meantime has worried him over the telephone and at his home. When this patient had her hearing she promised, if given her liberty, to leave for Buffalo at once. This was agreed to and she was placed on the train. Within two weeks she returned and continued to conduct herself as I have just described. Complaint was again made and she had another hearing. This time she called an attorney who offered to stand sponsor for her future actions. Under these circumstances she was allowed to go but in my opinion it will not be long until she reaches the homicidal stage at which time it will be extremely dangerous for her to be at large.

Observation 101 (Paranoia querulans). Geo. M., aet. 49, German, married, of moderate circumstances, has good physical health and gives no history of mental or nervous disease. This patient has always been eccentric and quarrelsome. He married early in life and resides with his family in the outskirts of the city. His relations with the community have been anything but peaceful, his domineering personality and exaggerated sense of proprietorship having brought upon him the ire of the entire neighborhood. This state of affairs has existed for years and he has at various times resorted to damage suits on the slightest pretext or displeasure. Recently he threatened the lives of little children who happened to wander on his premises and not very long ago sat on the porch of his home with a gun in his hand. Complaint was then made that this man was insane and dangerous. This procedure he hotly contested, employed a lawyer and contended that the judge had no jurisdiction in the matter. He subpenaed numerous witnesses and would laugh at them when they testified against him. During the investigation it was suggested that the accused take the stand in his own behalf. This in his haughty state was much to his liking and little did he know in relating his history and experiences that he was graphically describing a typical case of paranoia litigiosa. He started out to say that he was reared in a superior environment and that he inherited a rich intellectual patrimony. He was a born chemist and was qualified to make complicated analyses without a laboratory equipment. He could examine milk, oil and other substances through his specially endowed sense (tactile). Upon inquiry as to his business connections he stated that for some time he had been engaged in the various courts and at present had suits aggregating $100,000 in process of litigation. The number of attorneys representing him was large but they never proceeded without his counsel or advice. He further outlined a scheme to furnish the children of Cleveland with municipal milk and had made arrangements with Medina and other county farmers to ship the entire product of their dairies to him for examination and distribution. In this way he would become a public benefactor and acquire untold riches. He also stated that his flour and feed business was large and that his monthly purchases from certain Cleveland merchants amounted to thousands of dollars (representatives of these concerns were called in and denied any knowledge of such transactions). And so this poor paranoiac urged on by delusions of grandeur and vivid hallucinations has pestered the courts for years. At no time has a judicial verdict been rendered in his favor but that fact does not seem to discourage him. Many lawyers have represented him in the past on commission, only to find out to their sorrow how overcredulous they had been. The history of this case if complete would fill a volume. I have attempted to give you only an outline of the type. This deluded individual is still at large and may be seen almost any day at the court-house inquiring as to the progress of his many suits. He has shown no threatening symptoms of late and at present is on probation, a responsibility his attorney has assumed.

Observation 109 (Paranoia persecutoria). Patrick F., aet. 49, Irish, married, is a molder. Father was an inebriate. No other neuropathic or psychopathic history is known. I have had this man under observation 14 months. His history shows that for years he has been an industrious workman and has provided for his family. He has been known, however, as a very eccentric fellow and admits the possession of a most frightful temper over which he has had little if any control. When I first examined him he calmly stated that for a long time he had entertained well-grounded suspicions that his wife with whom he has lived over 20 years was unfaithful and he undauntedly accused a certain young man of being the cause of his domestic infelicity. He vehemently declared that his wife had repeatedly received this young man during his absence, that their actions formed the topic of every conversation and that nothing else was talked of in the neighborhood. In such a state of mental unrest, this unhappy mortal, fired with jealousy and upset by hallucinations, has made life for his family almost unbearable. After hearing this history I personally investigated the matter and discovered that all his accusations emanated from a disordered mind. His wife was a devoted mother, an ardent church worker and a very much respected woman. I went so far as to interview the accused who, upon hearing my story, was horrified and emphatically denied any knowledge of the man or his wife other than seeing them on the street. This young man's reputation was of the very best and his innocence in the affair was fully established. I continued to see this patient more or less regularly and attempted to convince him that his accusations were cruelly false and that he was the victim of delusions of marital infidelity. At my suggestion he agreed to meet the young man and during the interview half-heartedly admitted having erred but displayed no feeling of regret at the injustice he had inflicted. The sufferer left for his home and I had hoped that my efforts in his behalf would prove successful but such was not the case and I continued to hear of his threats and viciousness. In a very short time he returned and excitedly exclaimed that he had been trifled with long enough and if something could not be done at once, he would take care of it himself. Wherever he went people "gave him the laugh" and the day before he overheard some workmen discussing him on a street car. He further stated that his wife had been getting up at five o'clock in the morning on the pretense of attending early mass but he saw in this a scheme to meet her paramour, while he slept. My patient continued in this way for some months, going from bad to worse. He would leave his work in the middle of the day and watch his home. Sometimes he would sneak in and hide himself under the beds and in closets. Through an extensive series of facts and circumstances, too long to relate here, the victim developed the conviction that this young man was determined to put him out of the way and thus secure his wife. "Why," said he, "for three nights that fellow has come to my window and focussed a powerful searchlight on me and it was so penetrating that I could neither move nor speak." From this period he was extremely restless and vicious. He has now been under institutional treatment four months and the physician tells me that his delusions have developed thick and fast.

The prognosis of these cases is always unfavorable. It has been said, and I think rightly so, that "once a paranoiac always a paranoiac." Under systematic hospital care however these patients may live to advanced years. The usual termination is dementia. In every populous community will be found a class of cases who have, and have had for years, fixed and mild systematized delusions but have never evinced any evidence of violence or threatening conduct. Most of them are aware that their false ideas are not shared by others and cunningly conceal them for fear of being adjudged insane. Others possess sufficient self-control to restrain whatever morbid impulses come to them. Many are reasonably successful in business and a few have acquired fame in profane and sacred literature.

Paranoia is also of legal significance and the question will arise, should the paranoiac who knows right from wrong be held accountable for his crimes to the full extent of the law? The legal fraternity and, unfortunately, some medical men have on various occasions decided against the poor lunatic. They fail to realize that the patient lives in a world all his own, constructed by delusions which he is utterly powerless to alter. He recognizes no other law than that of heavenly origin. His crimes are the result of his hallucinations. He hears the divine voice commanding him to do his duty irrespective of the consequences and no human agency can prevent it. In my judgment the paranoiac with delusions of persecution and auditory hallucinations is the most dangerous individual in the community as he is likely to become homicidal at any time. Many of the frightful tragedies that shock the public morals have been committed by persons known to be eccentric but considered harmless.

621 Rose Building.

Amyl and Sodium Nitrites in Pulmonary Hemorrhage

By JOSEPH PLACAK, M. D.
Resident Physician Municipal Sanatorium for Tuberculosis of the City of Cleveland

Amyl and sodium nitrites in certain forms of hemoptysis have proved to be very good agents in controlling the bleeding. Having had a rather high mortality rate in treating these cases of hemoptysis by the use of morphin, an ice-cap, gelatine, etc., we were led to look for a more efficacious means of treatment.

The cases which have come under our observation in the past two years numbered 61. The amount of blood lost in each individual varied from three to 24 ounces. Of the 61 cases, 27 were treated by the use of morphin hypodermically or by mouth; application of the ice-cap; swallowing of cracked ice; administration of gelatine, adrenalin in large doses or atropin in doses of 1/50 to 1/25 grain; calcium chlorid in five grain doses, with the object of increasing the coagulability of the blood, although this had little or no effect as far as could be determined; absolute rest in bed in the recumbent position and restricted diet. Of these 27 cases nine died. Three of these patients had hemorrhages extending over a period of two weeks and became practically exsanguinated at the end of that time. It is held by certain authorities that there must be an aneurysm present in the lung, which, on rupturing, causes a fatal pulmonary hemorrhage. This was not present in two of these cases at autopsy. In the majority of the cases lost the disease was moderately well advanced and in few were cavities demonstrable.

The best success obtained, other than by giving nitrites, was

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Read before the Clinical and Pathological Section of the Academy of Medicine of Cleveland, June 5, 1908 by the administration of morphin, next by giving atropin, and last by the use of ice. The constant application of the ice-cap over the supposed seat of rupture of the vessel did not meet with as gratifying results as in a case reported by Downes,[1] of a man who lost 153½ ounces of blood in nine days, the greatest amount in one day being 31 ounces. The usual methods employed for checking hemoptysis had proved futile in this instance but on the application of an ice-cap to the suspected area the hemorrhage immediately stopped. The supposed seat of rupture of the vessel in the lung is hard to determine to a certainty. There is also some danger of causing a pneumonia by the constant application of the ice-cap as is supposed to have occurred in a few cases.

The use of amyl and sodium nitrites in controlling hemoptysis has in our hands been most gratifying. The ease with which the former is administered and its rapidity of action make it a most valuable adjunct in the treatment of hemoptysis. Other members of the amyl nitrite group may be used but their action is either too long deferred or they are not constant in producing certain physiologic effects. The several members of this group owe their physiologic action to the nitrous acid already present as a nitrite or subsequently formed by the reduction of a nitrate in the blood.[2] The rapidity of action is due to the ease with which the several members of this group give up the acid radical; thus if amyl or ethyl nitrite are inhaled they produce an almost immediate effect. The nitrites of the alkaline metals have the same properties and therapeutically have the same indications. The best of these and the one which is most constant in its action is sodium nitrite. Its action is produced in about 15 or 20 minutes and, in doses of about five grains, is prolonged to three or four hours. Nitroglycerin is slower but more lasting in its action because of the necessary and gradual reduction to a nitrite which it must undergo in the blood, since nitrates do not influence the central origin of the peripheral nerve filaments supplying the blood-vessels, and to which the physiologic effects of nitrous acid are ascribed.

The nitrites, as is well known, lower the blood-pressure by causing a dilatation of the vessels of the head, neck, skin, splanchnic area and brain. Immediately upon the inhalation of amyl nitrite there follows a marked flushing of the face, pain, a sense of warmth, a feeling of fullness in the head, giddiness and a tumultuous pulsation of the carotid arteries. The redness of the face corresponds to that seen in ordinary blushing but it may spread over the entire trunk. The redness of the skin is due to the dilatation of the peripheral blood-vessels, both arteries and veins.

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[1] Downes. British Medical Journal. London. June 29, 1908.

[2] Spenzer, Cleveland Medical Gazette.

It is thought that the vessels of the face and neck occupy a somewhat exceptional position as regards their ennervation and their susceptibility to the action of certain drugs. The sense of fullness in the head and giddiness are accounted for by the dilatation of the meningeal vessels. The vascular dilatation spreads from the parts first affected to all other parts of the body, being less, possibly, in the extremities. There is a possibility that some depression of the vasoconstrictor centers aids somewhat in the vasodilatation, this, however, has not been proved conclusively and it certainly is not the main cause of the dilatation because it happens in animals if the cord is destroyed. The seat of action of the drug is held to be in the unstriated muscle of the arteries and veins, the effect being due to the depression of this tissue and its nerve terminations. It is thought that at first there is some early central action as is indicated by the rapidity with which the flushing comes and goes. The great acceleration of the heart has been mentioned and consequently there may at first be a rise in blood-pressure, the vascular dilatation being more than overcome by the quickened cardiac pulsation, but as the dilatation of the vessels extends throughout the body, particularly in the splanchnic area, it soon effects a profound fall in blood-pressure. Large doses of amyl nitrite slow and weaken the cardiac contractions and finally arrest them, owing to direct muscular depression, but this action on the heart muscle is produced less readily than that on arterial muscle.

Soulier after putting rabbits under the influence of amyl nitrite was able to excise portions of their lungs without the loss of a drop of blood. Campani[3] believes that hemoptysis is the result of a combination of an unusual irritability on the part of the blood-vessels, and an increased blood-pressure. The conditions are approximately the same as in the menstrual molimen, temporary vascular erethism and hypertension. Both these factors can be controlled by drugs which reduce erethism and blood-pressure. Among these amyl and sodium nitrite take the lead and have about the same action but amyl nitrite acts almost instantaneously by inhalation, whereas sodium nitrite, by mouth, does not produce any perceptible effect until 15 or 20 minutes have elapsed, but its action is more prolonged, lasting about four hours. The best results have been obtained by breaking a three or a five minim pearl of amyl nitrite in a piece of gauze and allowing the patient to inhale the vapor until the hemorrhage stopped. After a few inhalations the blood-pressure becomes quite low, aiding materially in forming a clot. Sodium nitrite was given in five grain doses four hours apart after hemoptysis was stopped to maintain a low pressure. Patients were kept absolutely quiet in the recumbent position and on a non-stimulating diet. In case the patient is nervous and there is considerable cough, which is usually the case and which is due to the irritation caused by a certain amount of blood in the trachea and bronchial tubes, morphin or codein should be given to quiet the patient and stop the cough.

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[3] Campani: Gazzetta Osdepali Milan, March 8, XXIX, No. 29.

The pathologic condition of the lungs should always be borne in mind and success in treatment depends largely upon it. Hemoptysis might be due first to a congestion or an erosion of a small vessel in the lungs, which is by far the most frequent occurrence, or second, to the erosion of a large vessel or the rupture of a small aneurysm which is not so frequent. The latter condition is present usually in cases which have advanced to the cavity stage.

The nitrites seem to be contraindicated in the latter class of cases, in which the pulse is small and weak, and there seems to be some risk in administering them. The one case which we lost under the treatment with nitrites was of this class and had gone on to the stage of cavity formation. Amyl and sodium nitrites and nitroglycerin were given with very poor results. The patient bled for three days and then died. This class of cases had better be treated by the use of morphin, atropin, the ice-cap, etc.

The presence of a heart lesion combined with the tuberculosis seems to be no bar to the use of the nitrites. The *determination of the blood-pressure in these cases is a valuable aid in preventing and treating hemoptysis.* It should be taken as a routine in sanatoria for tuberculous patients. A persistently high pressure above the average should be kept low by the use of nitrites. In these drugs I believe we possess agents for good in pulmonary hemorrhage. Their action is due entirely to their power of lowering blood-pressure, thus aiding in the formation of a clot.

Unusual Mastoid Operations in Children

By T. A. BURKE, M. D.

The frequency of the involvement of the middle ear and its associated cavities in the diseases peculiar to children has long been recognized by the special but not by the general practitioner.

It is rare indeed, that diphtheria, scarlet fever, influenza, measles and the like do not invade the nasopharyngeal vault and thereby cause more or less disturbance of the organs of hearing. Too often, I think, ear complications are left to get well of themselves and thus many times there is established a chronic inflammatory condition that in the ensuing years rise up like Banquo's ghost to plague the possessor. To say nothing of the difficulties in hearing there are left foci of inflammation which may or may not light up and become acute or continue with destruction of the bony structure in the ear, the dangers from which it is unnecessary to mention to this Section.

My purpose tonight is to present some cases recently observed in children which to me, at least, possessed unusual features.

The first case is that of a baby nine months old, who in January, of this year, contracted influenza from his elder brother. The older child had been referred to me by H. J. Lee for bilateral otitis of the catarrhal type following influenza which had progressed to a favorable issue under local treatment. My attention was called to the baby who, I observed, was a mouth breather. There was no elevation of temperature or other signs of inflammation except some coryza, but I noticed when the right ear was pulled slightly outward from the side of the head, there were indications of tenderness. The view of the drum-membrane was unsatisfactory. I saw nothing more of the baby for two weeks when I was notified that there was swelling back of the ear. The characteristic distortion of the ear was found. There was vomiting and high fever but no discharge. The baby was removed to the hospital the next morning and the mastoid opened, some pus welling up at the first incision. Careful curetting finally exposed an area of the dura mater, the size of a dime over the tegmen tympani. The temperature gradually subsided and the case progressed favorably for a time, when vomiting and high fever recurred. By a shifting of the bandage in the night, the gauze tampon had worked up and granulation tissue had walled in some discharge. The cavity was washed out and repacked and the case then progressed favorably.

The second case, referred by E. O. Houck, is that of a girl, aged three, who had an attack of measles in February of this

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year, with pain referred to the left ear. Here again there was no discharge but some tenderness on pressure over the mastoid. The case was treated conservatively and seemed to progress favorably for a week, then there was a sudden rise of temperature with swelling back of the ear. The child was removed to the hospital and the mastoid exposed, showing pus in small quantity with considerable granulation tissue. This case has gone on to uninterrupted recovery.

The third case is that of a boy nine months old, referred by S. H. Monson and H. M. Tarr, with the following history: There was fluctuation over the mastoid, but discharge had ceased from the external meatus. The antrum was filled with pus and granulation tissue. The curetting was continued into the attic, but no effort was made to expose the dura.

To me the unusual feature in the first two cases was the absence of discharge from the ear in spite of the fact that pus in quantities was present. My explanation is that these cases present the typical feature of otitis externa dissecans of the older writers, a dissecting abscess from the middle ear which follows the line of least resistance.

That pus could be present—active and destructive—confined in a small enclosed space and not cause more systemic disturbance, is also an unusual feature. Not that the temperature curve is, by any means, an index of the situation, but pain, septicemia and the like would certainly be expected as would also a spontaneous rupture of the membrane and that the pus would cause necrosis, especially in the one case exposing the dura.

I would like to add a fourth case, a girl of 12 years with a history of fetid discharge from both ears continuing from childhood and following scarlet fever. The child had been brought to Charity Hospital with a history of high fever, rigors, vomiting, delirium and a very foul odor from the right ear. It appeared to me an acute exacerbation of a chronic middle ear suppuration but a few strokes of the chisel revealed an infected thrombus of the lateral sinus. This was thoroughly cleansed but the jugular was not ligated, as I feared the unnecessary prolongation of the operation, with resulting shock. There was no improvement whatever, and the patient died the following day. There is nothing especially unusual in this case except that one may speculate on the extension of the infection into the sinus. In view of the comparatively slight involvement of the mastoid cells, my own opinion is that there was direct communication through the floor of the tympanum with the jugular bulb. I feel that in a like situation again, I should ligate below the bulb in the hope of staying the spread of infection. This, however, is still a mooted question with the balance of authority, certainly, in favor of ligation.

The Cleveland Medical Journal

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EDITORIAL

The Commitment of Insane Patients

A great improvement in the method of commitment of insane persons to the Ohio State Hospitals has just become effective. This has been largely due to the advice of the superintendents of the various State Hospitals and there is now required a far more thorough investigation of the patient's condition both past and present than was formerly the case. The blanks previously in use left the whole statement of the case to the discretion of the one physician making the examination. This, in the case of a physician unfamiliar with the legal aspect of insanity, frequently resulted in a statement of symptoms that would be absolutely useless from a legal point of view in showing the patient to be insane. In the new forms to be filled out a number of leading questions are asked which would tend to bring out the essential signs of insanity and space is also reserved for the actual verbal statements of the patient. The examination has to be made by two physicians instead of one as formerly, and each of these must have had at least five years experience in practise. Physicians on the staff of a State Hospital are wisely debarred from making out these certificates of insanity, since the patient might subsequently come under their care and consequently hold them responsible for their commitment to the hospital and regard them as enemies. Such a relation between patient and physician could not but prove detrimental to the treatment.

In the past there has been a great deal of difficulty in securing satisfactory commitment papers and these improvements in the forms which have to be filled out by the examining physicians should accomplish much in doing away with this trouble.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Digitalis: In the *American Journal of the Medical Sciences* for June, Theodore C. Janeway treats of the use and abuse of digitalis. He asserts that the causes of failure in the employment of digitalis, in the order of their frequency and importance, are: (1) The use of inefficient preparations; (2) Use in unsuitable cases; (3) Improper dosage; (4) Improper methods of administration; (5) Neglect of other necessary therapeutic measures. The worst digitalis preparation is an infusion made by diluting the fluid extract, thus precipitating all of its active ingredients, and this is a common practise. The only solid form in which digitalis should be given is the freshly powdered leaf in capsule or pill, and since the dose is but one grain, there is no need for a stronger extract. The commercial digitalins are all impure mixtures, made as a rule from digitalis seeds, and should only be given when very mild effects are desired over a long period of time. The use of combinations of heart tonics usually with nitroglycerin, now sold in tablet form, is one of the most deplorable developments in therapeutics today. The practitioner who allows himself to give powerful drugs in this way fails to learn the action of any one of them. If he thinks at all he becomes a skeptic. Otherwise he remains little more than the agent of some manufacturing pharmacist. He has never happened to see satisfactory results from the fluid extract, and does not now favor its use. There remain two official preparations, the infusion and the tincture, besides the powdered leaves, which may, when correctly made, be considered trustworthy, and the choice of one of these must be largely a personal matter. His personal experience leads him, for most purposes, to favor the infusion, chiefly because one can be reasonably sure of having it freshly made if so specified. In case after case, supposed to have been treated with digitalis without benefit, he has seen prompt results follow its use. For hypodermic use the tincture has been most commonly employed, but it is unfortunately irritating and often causes abscesses or large hemorrhagic areas. Of the recent preparations digalen, while a favorite in Germany, he has found neither less irritating nor more efficient than the tincture. Digitalone seems decidedly less painful and fairly active, but there is, as yet, no ideal form for injection, and a good tincture is perhaps most certain in its action. The physician who gives digitalis to slow the heart in a paroxysm of tachycardia, or in fever to produce diuresis in acute nephritis, or to remove an inflammatory pleural effusion, is foredoomed to failure; yet all of these are attempted, and faith in digitalis for its rightful uses is lost in consequence. The direct action of digitalis is to increase contractility, tone and irritability. Loss of tone and diminution of systolic output are the cardinal indications for the use of digitalis. The only guide as to the dosage of digitalis is the therapeutic result. Digitalis should never be pushed for more than a few days without careful records of the heart as well as pulse rate, and of the amount of fluid taken and urine passed in 24 hours. In cases of hypertension, blood-pressure should also be recorded. Any marked decrease in urine is a danger signal not to be neglected, for with diminished excretion of the drug cumulative effects may supervene.

Arthritis: The *Archives of Pediatrics* for April, in treating of arthritis and "near" arthritis, states that the different forms of acute arthritis in infants and young children are not at all infrequent, that the exact diagnosis is often puzzling and that the results of early treatment are surprisingly satisfactory. Treatment in all cases should be begun by putting the affected parts at rest, and separating the joint surfaces by some form of bandage or traction. In conjunction with rest, applications of wet dressings of aluminum acetate or 60% alcohol should be made. It is surprising in how many cases this form of treatment will result in a subsidence of the inflammation. The cases should be very carefully watched, however, for evidence of suppuration. Should this occur incision should be made at once. The operation should be very simple, merely an incision into the inflamed tissues and into the joint if necessary, with evacuation of pus and provision for thorough drainage. When the bone is diseased the infected focus should be removed. It is surprising how rapidly the suppuration ceases and the joints heal with full recovery of function in young patients. Early but simple operation results not only in saving life but in securing perfect functional results. In the great majority of cases, of course, in which the joint affection is merely a manifestation of general sepsis, the conditions are not favorable. The diagnosis of tuberculosis or rheumatism should be made by exclusion and it should be remembered that infantile scurvy is frequent under one year of age. Finally, the earlier that proper treatment is instituted and, if necessary, simple incision is done, the fewer the number of joints involved and the greater the chance of complete recovery of function.

Mucous Colitis: In the *International Clinics* (Vol. I, Series 18), David Somerville treats of mucous colitis. The symptom-complex of abdominal pain, passage of mucus in the feces, and neurasthenia characterizes the condition. Considerable difference of opinion has existed and still exists regarding the etiology of this condition. Its cause does not lie in neurasthenia, but behind it, mucous colitis and neurasthenia being results of a common cause. Roger and Tremolieres have traced the cause to the liver. Nepper and Riva have shown that the false membrane is the result of an increase of mucinase and a simultaneous diminution of the anticoagulant, a normal constituent of healthy bile. They have prepared an extract of bile which, when injected into the colon, acts as an excitant to biliary secretion, and also supplies the anticoagulant wherewith the excess of mucinase secreted by the epithelial cells of the intestinal mucosa is neutralized. They claim to have established: (1) That mucous colitis is produced through a diminution in the supply of bile and that when no such diminution occurs, mucous colitis does not exist; (2) That the false membrane is the direct result of an augmentation of mucinase and a simultaneous diminution in the bile of anticoagulant. Somerville's results, in the use of an extract of bile in such conditions, are in complete harmony with those of Nepper and Riva, and it would seem that a ray of light has at last fallen on the treatment of this hitherto intractable condition. In conjunction with the rectal injection of the biliary extract, it is necessary carefully to select a dietary from which the least amount of toxic materials will pass to the liver. He has found in this connection, as well as in so many other conditions of the alimentary tract, the use of a properly prepared and genuine dried milk of service. The prolonged use of mineral waters is, in his experience, valueless except in those conditions in which there exists an associated catarrh. The cures of Carlsbad, Kissingen and other spas are never complete but ever in process of repetition.

Morphinism: In the spring number of the *Journal of Inebriety,* Charles W. Carter states that morphinism is not an immorality, but, according to the most advanced medical thought, a physical or psychophysical disorder, or a condition of disease. In watching the effects of the administration of a medicinal dose of morphin we observe two sets of symptoms, one, the specific effect of the drug itself and the other secondary to conditions brought about by the morphin. The whole machinery of nutrition and elimination is retarded in its action. The drug-victim is self-poisoned to an extreme degree and suffers all the myriad distresses ordinarily arising from the autotoxemic state. This, he takes it, is the morphin disease, a condition of auto-intoxication for the relief of the discomforts of which morphin is taken. It is a condition of double poisoning, first and least by the drug, and secondly and mostly by the toxins of the body itself. If the toxins were not present there would not be the pains and discomforts that call so beseechingly for the forgetfulness of opium. If the opium were not given the toxic condition would cease to be aggravated. Eliminate either factor and the morphin disease would not exist. The chief feature that looms up before us in the practical management of morphinism, and the one at which our remedial attack is best directed, is the state of toxemia—mainly autotoxemia—and effects directly traceable to auto-engendered poisoning. If this view is correct, we can understand why, instead of a pathologic entity with clear-cut essential symptoms such as we meet in malaria, diphtheria, or a host of easily recognizable ailments, we find in the morphin disease as many variations or types as there are varieties of mentality, of temperament, of character, of physical resistance; and of physical susceptibility. And if this is true, then not only will our treatment vary in accordance with conditions in each individual case, and thus be more intelligently and more certainly directed to a successful issue, but we will be also enabled to deal with the distressed and unhappy morphinist with a larger sympathy and a more enduring patience.

Gonorrhea: In the *Journal A. M. A.*, for May 23, Robert H. Herbert summarizes the treatment of 52 cases of almost every form of gonococcus infection, by the antigonococcic serum. The conclusions drawn from his report are quite clear. First, the serum has absolutely no effect on acute gonorrheal infections, whether they exist in the lower urinary tract or in any other part of the body. Second, its value in subacute and chronic cases is very doubtful, although there were a few isolated cases in which the results were somewhat better than we see with local treatment. Third, the value of this serum in the treatment of chronic gonorrheal joints is without question. In the past, these painful joints accompanying and following gonorrhea have been most resistant to treatment, both local and general, and he feels that we now have a remedy which will give rapid and permanent relief to the sufferers from this common complaint.

Neuritis: H. Burton Stevenson, in the *Medical Record* for May 16, reports 32 cases of neuritis treated with nitroglycerin. He arbitrarily classes them as acute, subacute and chronic, the first of under 10 days' standing, the subacute as under three weeks' duration, and those above this chronic. Nitroglycerin was given to all these patients in the following routine manner: Beginning with 1-100 grain every eight hours the interval was reduced one hour in every 24 until the full physiologic action of the drug was manifest or the patient was taking 1-100 grain every three hours, at which interval it was continued. The disagreeable flushing and headache were controlled by small doses of sodium bromid. When an idiosyncrasy was marked, the interval between the doses was lengthened. The effect of the treatment was marked in the acute cases within the first 48 hours. All of the 21 cases were discharged within one week, and some a few days before. The subacute cases responded more slowly but were all cured within two weeks. The results in the chronic cases were not so brilliant, but the condition was improved in all. In the chronic cases ammonium and potassium iodid were given in progressively increasing doses. It seemed to hasten the action of the nitroglycerin. Appropriate treatment for associated conditions was instituted when indicated. The physiologic action of this drug would seem to indicate its therapeutic effect in this disease. By dilating the arterioles of the sheath and nerve the nutrition would be enhanced and absorption of inflammatory deposits would be hastened. While he does not claim that nitroglycerin will cure all conditions of neuritis his results justify the belief that it will cure the vast majority of such conditions, and it should have the preference over other forms of treatment which fail more often.

The Chlorids: *Merck's Archives* for April (from *Folia Therapeutica*) states that Professor H. Strauss, of Berlin, was the first one to show that the retention of salt in the tissues plays an important role in the pathogenesis of anasarca. This manifests itself in a diminished excretion of salt through the urine, or in the simultaneous gradual increase in weight. Owing to disturbed renal function, a retention of salt in the tissues will take place, and as soon as the tissues are saturated every six grams of chlorid of sodium will hold back one liter of water. There are cases in which the body will hold a large amount of water, without distinct evidence of anasarca. Two methods may be resorted to to diminish the amount of chlorid;—first, a diet poor in salt may be advised; second, drugs may be given which stimulate the excretion of salt. The foremost drug for this purpose is diuretin which increases the amount of urine and its percentage of salt. This drug is also indicated when the parenchyma of the kidney has been affected, since according to the recent investigations of Loewi it brings about a hyperemia of the kidneys. The author has prescribed diuretin even in the most severe cases of parenchymatous nephritis without seeing any deleterious symptoms which could be ascribed to the drug. A still more marked flow of blood through the kidneys can be best brought about by combining diuretin with digitalis.

Psychotherapy: F. X. Dercum, in the *Therapeutic Gazette* for May, asks, In how far shall we apply psychotherapeutic methods? We should always bear in mind that the symptoms that our patients present have a physical basis, and especially is this true of the functional nervous diseases. States of exhaustion play a fundamental role in all of them and Janet has pointed out that when the general level of the mental tone is raised obsessions disappear. It would seem then that attention to the physical condition of the patient, the bringing up of his health to the highest possible level, must be the first object of our treatment. In other words, simple physiologic procedures, rest, full feeding, gentle exercise, massage, bathing and like measures should be instituted in every case. Rest and physiologic measures can be applied according to the character of the case, from partial methods up to full rest cure. Added to these conditions we should institute such simple psychotherapeutic measures as mental rest, especially such as is secured by the isolation of the patient. Secondly, the restraining of the patient and, later on, special mental exercises, or mental gymnastics if necessary. During all of the time judicious use should be made of normal suggestion, both direct and indirect. Under direct suggestion we should include such an explanation to the patient of his condition as may be adequate and tactful, pointing out that his symptoms are functional, and that they will in time disappear. That normal suggestion acts powerfully when the level of the general health is improving goes without saying. Suggestion under hypnotism is in his judgment rarely if ever justified. Psycho-analyses will probably never find a permanent place in our therapeutics.

The Jungle Plant: W. Duncan Silkworth, in the *New York Medical Journal* for May 30, writes concerning the jungle plant (*combretum sundiacum*) recommended as a cure for the opium habit.

A party of Chinese wood-cutters were presumably the first to discover the properties of the drug, which is now used extensively as a cure for the opium smoking habit in the Federated Malay States. The plant is a large climber and in preparing the drug, the branches and leaves are chopped into pieces about one and a half inches in length. After drying the woody portions are separated from the leaves and both the bark and the leaves roasted, the leaves to a less extent than the bark. Upon completing this process the two portions are mixed together again. The infusion is prepared by taking, for example, 10 ounces avoirdupois of the roasted drug, and mixing with about four gallons of water. This solution is kept boiling for three hours and the liquid when strained is ready for use. Whatever the daily amount of opium the person habitually smokes that amount is to be mixed with the infusion. The amount of opium is gradually reduced and the remedy while not a panacea seems to offer the best medium of reduction thus far given to the profession, and while his experiments have been confined solely to the practical demonstration of the plant, he is led to believe that there may be present in the remedy an active ingredient, "anti-opium" in its properties. The burnt opium, in gradually decreasing doses, certainly plays an important role in the treatment, but this alone or in combination with any other form of medication heretofore known has been on the whole unsatisfactory. He reports six cases treated satisfactory, the duration of treatment having been about 21 days.

Academy of Medicine of Cleveland

The fifty-eighth regular meeting was held Friday, May 15, at the Cleveland Medical Library, the President, H. W. Rogers, in the chair. The program was as follows:

1. A Year's Experience with Lumbar Puncture, C. W. Stone. A resume was given of the results obtained from the examination of the spinal fluid in 60 cases. This examination included the determination of: (1) The pressure of the fluid as shown by simple manometric reading; (2) The cellular content of the fluid as shown by (a) a pipette count of the cells, and (b) a specially prepared slide of the centrifugalized fluid; and (3) the bacterial content of the fluid. The cases considered included (1) Eleven cases of cerebrospinal meningitis, the meningococcus being found in each instance. (2) Nine cases of tuberculous meningitis with the tubercle bacillus found in three cases. (3) Four cases of purulent meningitis in which no organism was found, one of these being associated with a pneumonia. (4) Two cases of meningitis accompanying an influenzal bronchopneumonia. In both the influenza bacillus was recovered from the fluid. (5) One case of meningitis occurring in a man with lobar pneumonia, the pneumococcus being obtained from the fluid. (6) One case of meningitis from which a streptothrix was obtained. (7) One case of meningitis from which a streptococcus was obtained from the blood and the spinal fluid. Both these latter cases were children admitted to the hospital for gastro-intestinal trouble. (8) Six cases of pneumonia with delirium. In these no organism was found but the fluid was under increased pressure and the cellular elements were increased. (9) Ten cases of tabes dorsalis. (10) Thirteen cases of cerebral, spinal, or cerebrospinal lues. (11) Two cases of brain tumor. Among the meningitis cases the highest pressure found was 870 mm.; the largest number of cells per cubic mm. of fluid was 12,500; the differential count of cells in cases of purulent fluid usually showed a predominance of polymorphonuclear neutrophiles, but not always; the tuberculous cases usually had a predominance

of the lymphocytes, but not always. The cases of tabes and spinal lues sometimes showed an increase in the pressure of the fluid and nearly always showed an increase in the cellular content, the increase being due to lymphocytes. The following points were deemed worthy of emphasis: (1) That lymphocytes may predominate in a case of epidemic cerebrospinal meningitis, and the polymorphonuclear neutrophiles in a tuberculous meningitis. (2) That many of the pneumonia cases with delirium may be found to be actually suffering from a meningitis. (3) That many children with so-called meningismus may have meningitis. (4) That the cell content of the spinal fluid in cases of suspected lues of the central nervous system is a helpful aid in diagnosis.

2. Restoration of Intestinal Continuity following Artificial Anus, with Illustrative Cases, John Young Brown, St. Louis, Mo. (To appear in full in the JOURNAL).

G. W. Crile in the discussion asked about the speaker's experience with the Murphy button, whether it had been satisfactory and if the button had always passed. He also wished to know whether the speaker had encountered many instances of severe intestinal toxemia and as to his method of dealing with them. In his own opinion, opening the intestine and allowing the poisonous contents to drain away seemed most satisfactory. It was a very interesting physiologic fact that so much of the intestinal tract could be excluded for considerable periods of time without the patient suffering ill effects. This suggests the question whether there is not a greater degree of physiologic compensation in the digestive system than is generally believed. Anyone who has had experience with cases such as had just been described would understand the difficulty sometimes experienced in restoring the continuity of the bowel. Tuberculous cases had caused him the greatest difficulty and he had tried various means of operation; immediate suture was often ineffectual and the resection of the bowel must be very wide to secure sound tissue. The problem was a difficult one and he wished to hear the speaker's views upon it. He wished to emphasize and corroborate the statements as to what nature will do. The surgeon no longer claims to do everything but gives nature due credit.

R. E. Skeel requested further details as to the speaker's method of resection of the gangrenous bowel at the time of the primary operation instead of making a fecal fistula. It is still a common practise to have a fecal fistula when a primary anastomosis would be possible if the patient were in good condition. Great interest had been aroused by the speaker's contributions upon this subject some three years ago when he reported a number of cases of strangulated hernia in which the mortality rate from primary intestinal resection was much less than that for establishing fecal fistula under similar circumstances; for this reason he advised a method of operation which, while not new, had been dropped, viz: resecting and anastomosing the intestine through an accessory abdominal incision instead of through the incision for the relief of the strangulation.

M. Rosenwasser said his experience with such cases had been limited but he recalled one case of strangulated hernia in which the intestine was blue and in a threatening gangrenous condition. He had opened and drained the intestine and subsequently closed it successfully.

John Young Brown, in reply, said he was very partial to the Murphy button and had had no bad results except in gastro-enterostomy in one case of which the button had been retained. He had often used it in end to end anastomosis and had had no trouble, he thought it made the very best anastomosis and that the rapidity with which it could be placed was a great advantage. He had had an interesting illustration of its value in a case in which two anastomoses had been made, one with the button and the other with suture. The patient recovered but died later of tuberculosis. At the autopsy the site of the button anastomosis was almost invisible while the suture anastomosis was easily found and showed the sutures still *in situ.* The toxemia in obstruction cases was a powerful factor in the mortality. His practise was to thoroughly wash out the stomach before and immediately after the operation. Primary resection and a complete operation should be done if possible. An artificial anus is a disgrace to surgery as it usually implies temporizing measures. His method was to pull down the bowel well until healthy tissue was reached, then to place a temporary clamp on the proximal end, to open the bowel below it, then to tie a tube in this opening and finally to remove the clamp allowing the bowel contents to drain away while he proceeded with the tying off of the mesentery and the resection of the other end of the bowel. No time was thus lost.

The physiologic compensation of the digestive tract is amazing. At one meeting he had shown resections, in four cases, of seven, six, four and two feet respectively. In one of the cases he had just reported the entire large bowel had been out of commission for 10 weeks with apparently perfect physiologic function of digestion. He was confident we knew little about the function of the large bowel. He had performed anastomosis between the ilium and sigmoid flexure for colitis and other troubles with good results, and Lane, of England, goes even farther than this and reports cases in which he has removed all of the large bowel except the sigmoid. His experience with tuberculous fecal fistula had been very unsatisfactory. Tait first advocated primary bowel resection through a supplementary abdominal incision and later it was taken up by Price, of Philadelphia. He, himself, had been first prompted to do it by encountering a gangrenous bowel in a femoral hernia. In this case he opened the abdomen above, did a wide resection and an end to end anastomosis with the Murphy button. The result was so satisfactory that he had followed this plan in a number of other cases. He had done 13 primary resections with 10 recoveries but these were not all done through supplementary abdominal incisions. It was important to emphasize the necessity for operation in all hernias, it was a reflection on medicine to have strangulated hernias occur. Temporizing with hernias by means of taxis, hot applications, etc., is bad practise, operation should be done. Strangulated hernias are becoming much less frequent than formerly and will diminish further only from advocating operation for all cases of hernia.

A special meeting of the Academy was held at the Cleveland Medical Library, Friday, May 22, the President, H. W. Rogers, in the chair. The program was as follows:

Surgery of the Large Intestine, by B. G. A. Moynihan, of Leeds, England.

The speaker said in part that he had been greatly interested in the surgery of the large intestine. The problems were so little understood that he had tried to elucidate some of them, first by looking up the records and then by having his assistant make a close study of the anatomy of the large intestine, especially of its lymphatic system, since the surgery of malignant disease is not only the surgery of the organ involved but is of wider importance. The vascular supply of the large intestine was carefully studied so as to avoid the question of gangrene after operation and to gain a knowledge of the venous supply through which metastases may occur. As a result of his studies he divided his paper into two parts, (1) Malignant Disease of the Cecum; (2) Malignancy of the Sigmoid Flexure and Rectum.

As regards carcinoma in the cecal area including the cecum, appendix, the lower part of the small intestine, the ascending colon and hepatic flexure, we find carcinoma very frequently here and its extension is practically always *via* the lymphatic system. Their studies of the lymphatic system, especially by the injection method, showed that a most important lymphatic gland, which receives lymphatic vessels direct from the cecum and appendix and which they therefore call a primary lymphatic gland, is almost constantly situated at the point where the superior mesenteric artery gave off the ileocolic branch, just in front of the duodenum. This gland is so often invaded that even early malignant involvement of the cecal region demands its removal and consequently the ligation of the ileocolic artery at its origin. To obviate the occurrence of gangrene of that portion of the intestine which would result from this ligation and on account of the retrograde infection of the lymphatic glands in the lower ileum, it is necessary to remove the lower 18 inches of the ileum, the cecum and the appendix, the ascending colon and part of the transverse colon. This is best accomplished by opening the peritoneum on the outer side of the ascending colon and stripping the colon and its attachments away from the posterior wall, reproducing in fact the fetal condition in which the colon possesses a mesentery. When this has been done the removal of the whole area is very simple and an end to end anastomosis is made between the end of the ileum and the transverse colon. This wide resection must be done in every case no matter how early the infection. It is a question of the removal of the whole lymphatic area involved and not of the local intestinal disease.

In regard to malignancy of the sigmoid and upper rectum, the operative results have been very unsatisfactory in the past. Anatomic studies showed the presence of a lymphatic gland which very often drained the upper sigmoid and rectum and which was located at the junction of the inferior mesenteric artery with the aorta. As this gland has to be removed it was necessary to cut the inferior mesenteric artery at its origin. Owing, however, to the peculiar arrangement of the arterial vessels, there exist anastomotic loops connecting with the middle colic artery that leaves this whole intestinal area amply supplied with blood after the ligation of this artery, so that there need be no anxiety as to gangrene. The method of attack is similar to that described for the ascending colon, the peritoneum being incised, to the left of the colon and then the descending colon, the splenic flexure, the sigmoid, and if necessary part of the transverse colon are dissected off the posterior wall and removed. The end of the transverse colon is then brought down and anastomosed with the rectum. This is easily accomplished owing to the increased mobility of the transverse colon and colotomy is really never needed. This method applies only to the colon and upper part of the rectum. In the middle rectum the question is an entirely different one and the spread of the disease resembles that found in cervix carcinoma.

The speaker also referred to the possibility of the complete removal of certain carcinomata of the colon by means of Paul's operation, sometimes known as the Mikulicz operation, and this may result in a permanent cure. He also referred to the mimicry of malignant disease which sometimes occurs in the large intestine and which may be due to various inflammatory and non-inflammatory infections.

W. I. Terry, of San Francisco, in opening the discussion said that he considered this work as much epoch-making, possibly, as that of Halsted in breast carcinoma. He would suggest that the gland, which the speaker had described, should be named the gland of Moynihan, notwithstanding the objections to naming any such structure after a person. There was one point about the gland that was of interest—its being directly in front of the duodenum, the third portion of the duodenum he believed, and in such close proximity to the blood-vessels that they had to be sacrificed and, as he understood, this necessitated the sacrifice of all the ascending colon and a portion of the transverse. Would it not be feasible to remove this gland without disturbing the arteries because, as some have shown, the arteries are practically never invaded by carcinoma. Was it a question simply of venous or arterial blood supply? If the vein had to be cut would that necessitate the resection of such a large portion of the bowel? But if it were a question of the arterial supply could the artery be spared by taking away its outer sheath? He offered this simply as a question without knowing the facts.

The mobilization of the intestine was certainly a very spectacular device, so much so that with the operation upon the descending colon we had something entirely new and something that would do away with the disadvantages of a colotomy. The disadvantages of this had been emphasized by the speaker more particularly from the standpoint of the physician. He thought it should be emphasized from the standpoint of the patient. Many patients would refuse an operation if they believed that they had to endure an artificial anus afterwards. A more disagreeable thing could hardly be imagined.

He then referred to a phase of the subject upon which the speaker had not touched. Several years previously he had seen a case of megalocolon in which the symptoms had been decidedly puzzling and the diagnosis had not been made. A young woman had a tumor the size of an infant's head in the upper abdomen; this was freely movable from the right iliac region across to the left. Various diagnoses were made by different physicians, such as movable kidney, movable spleen, and tumor of the omentum, the last seeming the most likely on account of the extreme mobility. Operation revealed an enormous colon nine inches in diameter and very much elongated so that the mass very readily came outside the incision. The walls were as thick as the stomach walls. The mass was simply a fecal concretion inside the megalocolon and after much difficulty it was broken up and forced out. In dealing with the colon, being unaware of any operative procedure having been advanced for such a condition, it seemed best to narrow it as one would a dilated stomach by gastroplication. This was done longitudinally by multiple sutures, the colon being simply infolded more and more until it was narrowed in its entire length. A long time was required in suturing over five feet of intestine. The patient made a splendid recovery and has had no trouble since. Since then he had looked up the literature and found that the operation had been done elsewhere. As a rule either resection or a side-switching of the large colon with lateral anastomosis had been done.

D. P. Allen thought that malignant growths were much more common in the sigmoid than in the cecum. Reference had been made to Halsted's work on carcinoma of the breast in which disease, theoretically, all the lymphatic glands should be removed. Malignancy was not confined to those glands macroscopically enlarged. Microscopically 85% of the cases showed secondary growths in the axilla but it was a question whether the supraclavicular region should be dissected in all cases. His personal experience had been that there was rarely recurrence above the clavicle and that operation in this situation was rarely indicated. Halsted himself in a recent discussion in Washington seemed to recede from his original position.

As to the resection of the sigmoid flexure the operation presented by the speaker seemed to be the correct one, but this would have to be proved by statistics. His own experience with such growths of the sigmoid had been that they were usually small. Whether in such a condition a wide dissection were necessary would have to be determined by experience. Personally he had found that it was very difficult to make an end-to-end anastomosis in the vicinity of the promontory of the sacrum in which location malignancy of the bowel was very common. Because of this difficulty his experience had been very unsatisfactory.

M. Stamm, of Fremont, said he had experience with only two cases of carcinoma of the sigmoid. In one he had made an end-to-end suture 10 years ago. He had reported the other six years ago and the patient was still living. The speaker's results were remarkable and should induce others to follow his plan of operation.

C. B. Parker said that the operation had been rendered absolutely anatomic and that all our best surgical work had been done by following anatomic lines. This complete removal of the lymphatics was the essential part in treating carcinoma. Cooper had given the best description of the lymphatics of these glands showing why, after the most careful and extensive removal of the lymphatics, breast, fascia and muscles, failure sometimes results because we have looked too much in one direction for the lymphatic channels, and that in carcinoma a deviation of the lymphatic current could occur through secondary lymphatic channels, in the case of the breast going to the mediastinum beyond our reach. He had been very greatly interested by the new work of the speaker.

G. W. Crile said that all the points had been discussed or mentioned so there was little to say. In the logical position taken in regard to the relation of the lymphatic glands, the importance of their removal and in the description of an adequate operation, he felt the last word had been said upon the subject.

H. F. Biggar said that it had been asserted at a recent meeting that there was nothing new in methods or in the extent of operations, that there could, however, be a perfection attained in regard to the technic, permitting more difficult operations to prove successful. The speaker, however, had illustrated a plan that was entirely new and novel and of his own devising.

F. E. Bunts expressed his appreciation of the paper. In malignancy of the large bowel with the prospect of colotomy and the pitiful condition in which it left the patient, operating upon the rectum and sigmoid was approached with great hesitation and without hope on the part of the patient. He could not believe that this system of mobilization of the large intestine was quite as simple as described except in the speaker's own hands, yet, with a certain amount of practise, we might hope at least in a certain way to approximate the results he had obtained. If we did this we might relieve many of our patients of a disease with which we had heretofore been unable to cope.

Mr. Moynihan, in closing the discussion, said that the points raised were the very ones that at the present state of our experience were in question. So far as the dissemination of carcinoma of the large intestine, and the cecum particularly, was concerned there were only two possible paths: the first, by means of the lymphatic system; the second, through the veins. He himself had seen only two specimens in which it seemed clear that the dissemination was through the venous system. In carcinoma of the breast it was evident that the lymphatic system was chiefly involved. If the lymphatic system were involved in carcinoma of the large intestine it was within our grasp and it was practically certain that every particle of it could be eradicated. Halsted's work in connection with the breast was almost beyond criticism He had enunciated some of the greatest principles put forth by any American surgeon, but he had apparently ignored a certain fact which Handley's work had shown. that was the importance of the epigastric infection by carcinoma of the breast. Infections of the liver and abdomen occurring in breast carcinoma were due to a direct permeation of the deep fascia in the epigastrium and the direct passage of cancer cells into the hepatic area. If this were true, and he thought it would be established, the problem of breast carcinoma was entirely different from that of malignancy of the intestines.

A large number of the out-of-town members were present at this meeting. The adjournment was followed by a smoker and refreshments.

THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The thirty-sixth regular meeting was held Tuesday, May 29, at the Cleveland Medical Library, A. R. Baker in the chair.

D. B. Smith presented a patient with aneurism of one of the vessels of the orbit. The symptoms developed two months after a fall upon the back of the head. There were marked circulatory disturbances of the vessels of the eye, especially the external ones. Vision was not affected. The aneurysmal bruit was plainly audible to the patient. The case was discussed by W. E. Bruner and A. R. Baker.

S. H. Monson showed a patient who had had multiple nasal polypi which had completely blocked the nasal passages, distended the nose and caused marked deformity. From one side of the nose 15 polypi had been removed.

The program was as follows: Duboisne in Refraction, E. P. Morrow, of Canton, Ohio. Discussion by J. E. Cogan, A. R. Baker, E. Lauder and W. E. Bruner.

CLINICAL AND PATHOLOGICAL SECTION

The fifty-second regular meeting of this Section was held Friday, June 5, 1908, at the Cleveland Medical Library, W. H. Weir in the chair.

H. J. Gerstenberger presented three children and one adult. The first patient, a baby 10 weeks old, was a first child and had been delivered without instruments. It was healthy at birth and there was no luetic or tuberculous history. The father and mother were healthy. When the child was four or five weeks old the parents noticed that it did not use its limbs, and a month later they brought it to the dispensary. The child showed a symmetrical paralysis of both upper and lower extremities, in fact everything below the neck, except the diaphragm. The galvanic current gave the reaction of degeneration. The patellar reflexes were absent, the cremasteric and abdominal reflexes present. There was no loss of sensation, which ruled out transverse myelitis. As the paralysis had been present for nearly six weeks and as yet no atrophy of the muscles was visible one could, in all probability, exclude an anterior poliomyelitis. Oppenheim's myotonia congenita had to be kept in mind, but the presence of the reaction of degeneration excluded it positively. A diagnosis of polyneuritis of obscure origin was made. The child had had no fever, no illness, it nursed well and did not cry at all. Cultures for diphtheria were negative and there was no history of any inflammation of the nose or throat. In reply to E. O. Houck, who asked how anterior poliomyelitis had been excluded, the speaker said that this was excluded by the absence of acute onset, the symmetrical distribution and the absence of any atrophy.

The other two children had been subjected to the cutaneous tuberculin test. The five methods of using tuberculin for diagnosis were reviewed, viz: (1) The method of subcutaneous injection, a rising temperature showing a reaction. (2) Escherich's "Stichkanalreaction," performed in the same manner as the first, except that doses are used which are small enough to avoid a general reaction. The reaction is a local one and consists of a swelling, reddening and some infiltration in the subcutaneous tissue, into which the solution flows from the needle point. (3) Moro's reaction, which consists in the appearance of small red papules, of varying number and size, in the skin where a small pea-sized piece of a 50% tuberculin-lanolin salve is rubbed in. An area of five cm. in diameter, just below the ensiform cartilage, is the spot where it is usually applied. It is the most simple as no asepsis is required. It is very expensive, however, and this is the objection to it for dispensary use. (4) Wolff-Eissner's or Calmette's reaction, which is brought about by dropping a 1% solution of tuberculin into the eye, and which ought not to be used at all on account of possible danger to the eye. Very marked and protracted conjunctivitis, ulcers of the cornea, etc., have been reported. If it were the only reaction at our disposal, we might be justified in using it, but as we have four others which can be employed, we ought to desist from its use. (5) Von Pirquet's reaction which is absolutely harmless and can be used whether there is fever or not. The last is a very great help in infants, and was used in 12 cases at the dispensary. With a dentist's burr three holes about one mm. deep and about 2.5 cm. apart were made in the arm. In the upper a 25% solution of tuberculin in ½% carbolic acid and 20% glycerin solution was dropped. In the lower a 10% solution of tuberculin in the same solution was used and in the middle, a control was made by dropping in the plain solution without any tuberculin. In the case of a positive reaction a definite, raised, red areola developed around both of the tuberculin inoculations but none around the control. In a negative case all three inoculations failed to show a definite areola. The child shown, a male 16 months old, whose father is tuberculous, had had a temperature of 39.5 C. which continued for four or five days, but no lesions could be found. After 24 hours a positive reaction was obtained, as could be readily seen. A similar case was mentioned in which a negative reaction occurred although the temperature had been 40° C. for 10 days and a few rales had been heard at the left base (lobar pneumonia). Another child about eight weeks old was shown with a negative reaction. It was breast-fed five times in 24 hours. Its mother, who was also presented, had pulmonary tuberculosis and several of her children had tuberculosis. She showed a well-marked positive reaction. Negative reactions were reported in two nursing children about 14 months old, whose mothers had pulmonary tuberculosis and who gave a positive reaction. The children developed well, which seemed to show that nursing should be continued in such cases if the mother could stand it. Von Pirquet's reaction is of use in adults only when negative, as nearly all adults give the reaction.

E. O. Houck asked whether this procedure gave any constitutional reaction.

H. B. Ormsby inquired as to the advantage of this method over the subcutaneous test with a hypodermic injection. Whether the latter method would not be more certain and if care was not necessary in preventing contamination of the cutaneous inoculations.

W. E. Lower asked how deeply the inoculation was made and whether any bleeding occurred.

S. L. Bernstein asked whether the control inoculation was customary.

In reply H. J. Gerstenberger said that no constitutional reaction occurred. The disadvantage of the subcutaneous injection of tuberculin is that it is still held by some that harm may result from the absorption of even a small amount of the tuberculin, also that the child must have no fever if the test is to be applied. By von Pirquet's method the holes are very shallow, just like a vaccination, and there should be no bleeding. Control inoculations of the mothers of children are made as a routine, the solutions being the same as those used in the child.

The program was as follows:

1. Hypertrophied Faucial Tonsils and Adenoids as an Etiologic Factor in Backward Children, H. B. Ormsby. (Appearing in full on page 387.)

S. L. Bernstein, in the discussion, said that he heartily agreed with these conclusions and statements as to the benefits of the removal of adenoids. He recently had relieved a child, eight years of age, with a most persistent chorea, by removal of adenoids after medical treatment and rest in bed had failed. He did not agree with one part of the paper, that was in not using anesthesia and in the removal with a single movement of the curette. Adenoids are often so enlarged that a curette will not engage them and one has to use an adenoid forceps. Without the use of anesthesia the child is not under good control, especially if it is necessary to go into the deep corners of the pharynx, and frequently there is a recurrence after incomplete curetting. In dispensary work when time is limited this may be done, but in private practise the use of anesthesia is essential. The choice of anesthetic may be different with different physicians. He had not used nitrous oxide, but had used ether, which is much nicer than chloroform in children.

H. B. Ormsby said in reply that he found when the adenoids alone were the difficulty, when the tonsils did not require removal and when the child had not been operated upon before, one could do without the anesthetic. As to not being able to do it completely, by using a small curette and by pushing well back toward the posterior nasopharynx one can, with a single sweep, remove them pretty completely. He would rather do it under general anesthesia, but many times the parents objected to an anesthetic and he did without it for this reason.

2. Types of Paranoia, H. H. Drysdale. (Appearing in full on page 395.)

H. B. Ormsby, in discussing the paper, said that it was a great pity that paranoia was not more universally understood. The laity know nothing about it, the legal profession and the Probate Judges know very little about it, and the majority of the medical profession know but little about it. We ought to have more such papers. Once a paranoiac, always a paranoiac. They themselves and their friends think they are very much persecuted. One case just reported had been twice before the Probate Judge and yet had not been committed to the asylum.

The assassins of Mayor Harrison, of Chicago, and President McKinley were eccentric,—they had been paranoiacs for years. If this disease were better understood such murders could be avoided.

E. D. Houck thought it curious that a judge should pass on cases of insanity. It might be a good idea to make the County Coroner a judge in insanity cases.

H. H. Drysdale, in closing the discussion, said that since this paper was written every case had had a recurrence and had been before the court. The suggestion for the Coroner to act as a judge in such cases was a good one. We, fortunately, have in Cuyahoga County one of the best Probate Judges, but the trouble is that these people come before the court and seek attorneys. The attorneys often stand responsible for them and they are allowed to go.

3. Intussusception of the Jejunum; Report of a Case and Presentation of Specimen, W. E. Lower. (To appear in full in the JOURNAL.)

R. K. Updegraff, in the discussion, asked what the personal experience of the speaker had been as to the mortality of the operation. He, himself, had seen seven infants operated upon for intussusception and had never seen a recovery. Three or four were operated upon in the early stages by some of the best operators in the city. It certainly could not be generally understood that there is any such hope from operation, as almost 90% of recoveries.

W. E. Lower, in reply, said that his own experience with intussusception had been very limited. He had operated upon only two cases, the one which he had just reported and one other of the ileocecal type. In this latter case, after opening the abdomen, he was able by gentle taxis to relieve the invagination, and by placing a few sutures at the point of beginning invagination there was no recurrence. He had seen three other cases: one which he reduced by taxis under anesthesia, one by injection of oil, and one case which was seen late died before anything could be done. All of these were of the ileocecal type.

It was true the mortality rate after operation had been very high, probably because no one surgeon had had an opportunity to operate upon a great number. The experience of Clubbe, however, showed that the mortality rate could be very much reduced if the cases were seen early enough, and his last report showed a mortality of only 12½%. In the cases reported by Codman the mortality rate was about 50%. Of course, as everyone knew, children do not bear prolonged operation well, and as a rule he thought there had been entirely too much manipulation in an effort to reduce the invagination. Unless the intussusception could be reduced easily he believed a resection was better. It was easy to see how futile the injection of oil would be in the reduction of the kind shown in this specimen, situated as it was in the upper part of the small intestine. The mortality rate would surely decrease with experience and earlier recognition of the condition.

4. Amyl and Sodium Nitrite in Pulmonary Hemorrhage, J. C. Placak. (Appearing in full on page 403.)

F. W. Hitchings said he had been interested in what the speaker had said regarding a dose of five grains of sodium nitrite. He had had two cases lately in which he used this drug. One, a woman of middle age, had high tension pulse and hemorrhages which were controlled by vasodilatation. He began with one grain dose of sodium nitrite and the depression was actually alarming. He was frightened at the result and changed his ideas of the dosage. He had used it in another case, in which there was high tension pulse with interstitial nephritis, in a one-half grain dose. Those cases were different, however, from cases of pulmonary hemorrhage. The result came very near being serious in the first case.

H. J. Gerstenberger asked if the speaker had used adrenalin chlorid subcutaneously. He himself had used it in doses of ½ cc.

J. C. Placak, in reply, said that amyl nitrite was distributed in the wards and as a regular routine, when hemorrhage started in these cases, the nurse or orderly gave amyl nitrite. The patients could not bear the last lot of sodium nitrite given in five grain doses. He discontinued it and used some from a new package and had no peculiar reaction at all. Other than from this one bottle he had had no bad results, except in a case that went on to the cavity stage. Of course it was contraindicated in this condition. He had cited only cases having severe hemorrhage, those having lost three ounces of blood or more. He had used adrenalin chlorid in a few cases with pretty good results but he adopted the routine of using amyl nitrite.

ACADEMY MEETING

The fifty-ninth regular meeting was held Friday, June 19, 1908, at the Cleveland Medical Library, President R. W. Rogers in the chair. The program was as follows:

Studies of Two Cases of Paroxysmal Hemoglobinuria, with the Results of Studies of Hemolysis in these Cases; from the standpoint of the Side Chain Theory and the production of Antihemolysin, C. F. Hoover and C. W. Stone. (To appear in full in the *Archives of Internal Medicine.*)

Two cases were reported both being young men 25 years of age and both apparently in good health. One had attacks of paroxysmal hemoglobinuria for five years, while the other had these attacks but for 16 months. These paroxysms were confined almost wholly to cold weather. In the one who seemed to have less sensitive blood they occurred usually during the time from October to May. The other patient was extremely sensitive to cold and had attacks even during the summer months if there was any cold weather; he had even had them occur in July. The attacks could be brought on by placing one foot in a vessel containing cold water. The time usually required to bring them on was about 15 to 20 minutes. They placed the foot in up to the middle of the leg; the water was about 15° C. Soon the foot and leg would begin to feel as though they had been pounded. Then beginning with chills or rigor there would follow cyanosis of the lips and finger nails. In one patient there would appear macules, and in the center of each would be found a vesicle; this was the only cutaneous manifestation. During the time of the chill there would be no elevation of temperature; with the beginning of the chill there would be a lowered temperature of about one degree per rectum; then the temperature would begin to rise, gaining its maximum about one and a half hours after. When the foot was placed in cold water the temperature was 98.5° F. At the time the foot was removed it would be 97.5° F. Following a chill which would last about 20 minutes there would occur this rise in temperature and in the course of an hour and a half it would register about 103° F. This temperature lasted a varying period of time, sometimes as long as three hours. The black urine was obtained often before the elevation of temperature occurred. They found that when the patients passed urine directly at or during the latter part of the chill, it was dark.

Soon the urine was the shade of burgundy red. There was nothing found in the urine that was abnormal but oxyhemoglobin and some albumin. There were no red cells at all, only blood casts. When symptoms developed during the febrile stage, there was noted also some tenderness over the spleen. The problem that confronted them was, what had happened to these patients; how could they account for this hemoglobinuria? When the foot was placed in cold water and blood withdrawn from a vein, pink serum was found; before it had been straw colored. They demonstrated that this hemolysis occurred while the patient was chilled; it probably began before the patient was chilled. The hemolysis was completed before elevation of temperature began. They found that during the attack the maximum blood-pressure was unmodified and remained the same during the attack. The quantitative analysis made of urea, the nitrogen, the phosphates, chlorides, etc., was found to be the same before, during, and after the attack; there were absolutely no variations. The fact was demonstrated that one could not get hemolysis without the employment of cold.

The serum of the patients' blood taken during the interval between the attacks responded to laboratory tests which reproduced the exact procedure which occurred in the body when subjected to cold. Every phase of the side-chain theory of Ehrlich could be confirmed. The serum could be activated by cold, inactivated by heat. It could also be reactivated by the addition of a complement from normal serum. The fixation of the amboceptor to the red blood-cells could be demonstrated as a biochemic union. The amboceptor could be exhausted from the serum and the hemolysis could be inhibited by an antihemolitic body procured from rabbits treated with human serum. Cholesterin also prevented the hemolysis. Both cholesterin and the antihemolytic serum were proved to act as anticomplements. It was further shown that a low temperature was necessary to procure fixation to the complementophilic end of the amboceptor as well as the cytophilic end of the amboceptor.

2. Some Royal Accouchements, J. C. Reeve, Dayton, O.

The Section of Experimental Medicine and the Ophthalmological and Oto-Laryngological Section held no meetings during June.

Book Reviews

Diseases of the Nose, Throat and Ear. Medical and Surgical. By William Lincoln Ballenger, M. D., Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, of Chicago University, of Illinois. Octavo, 896 pages, with 467 engravings and 16 plates. Cloth, $5.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

One needs only a slight knowledge of the anatomy and pathology of the nose, throat and ear to appreciate their intimate relation and interdependence. So the advantage of having either of these fields discussed by one who is at the same time an otologist, laryngologist and rhinologist is at once apparent. Nor does the union of the three fields cover a literature or a work so extensive that it is not possible for a man to become expert in all. In other words, your reviewer is firm in the belief that diseases of the nose, throat and ear should be embraced as one distinct specialty. Ballenger is certainly well fitted for the task he has set before himself.

The book is essentially a clinical one. Various operations are discussed in clear and concise manner and above all are elucidated by illustrations to which the text frequently refers and which leave no possibility of doubt as to the author's meaning. These illustrations are from photographs and drawings. Some are schematic. They emphasize well the value that such work contributes to any publication and are certainly models of excellence. In the newer fields, such as bronchoscopy, esophagoscopy, the more recent surgery of the septum and the diagnosis and surgery of the internal ear the book is especially complete.

Considering its limitations as to space—a single volume covering the nose, throat and ear—it has solved its task admirably. The advisability of attempting such a task seems questionable. We are inclined to believe that it is the demand of the publishers for a one volume, salable book, rather than the expression of the better judgment of most authors. When one peruses Politzer's 1200 pages on the ear alone, Zarniko's most estimable work of 750 pages on the nose and nasopharynx, and Hajek's classic monograph of 350 pages on the accessory sinuses, the impossibility of accomplishing the task seems evident. A one volume book must be essentially incomplete.

The most striking weakness and incompleteness in the present work is on its anatomic side. It is a question, however, whether each successive book should repeat all the special anatomy of the subject with which it deals. It seems hardly necessary. Zuckerkandl, in his two monumental volumes has left nothing to be desired in the anatomy of the nose, while the anatomy of the ear and throat could be gained from other sources equally comprehensive. This fact the author might well have mentioned in his preface.

Altogether, the book is a good one. It certainly ranks among the very best single volume editions which have been published in this field. It should prove of distinct value both to the student and to the practitioner as well.

The Practical Medicine Series, comprising ten volumes on the Year's progress in Medicine and Surgery. Under the general editorial charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume I, General Medicine, edited by Frank Billings, M. S., M. D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A. M., M. D., Professor of Medicine, Chicago Clinical School. Series 1908. The Year Book Publishers, Chicago.

This volume embodies the main contributions to practise during the past year, and is a very satisfactory summary of the year's progress within this field. It is conveniently arranged, of a moderate size, and is a work of practical value. The various subjects and selections in full and in abstract are well presented. Its subdivisions comprise Diseases of the Respiratory and Circulatory Organs, of the Blood and Blood-making Organs, of the Ductless Glands, of the Kidneys and General Infections and Metabolic Diseases. The first 86 pages are devoted to Tuberculosis. Diseases of the Heart occupy 117 pages, and in General Infectious Diseases, Influenza is quite extensively considered. It is one of the best of the series in which it occupies a place and is an excellent epitome of recent medical progress.

The Development of Ophthalmology in America, 1800 to 1970. A Contribution to Ophthalmologic History and Biography. An Address delivered in abstract before the Section of Ophthalmology of the American Medical Association, June 4, 1907. Revised and enlarged. Illustrated by selected portraits and cuts. By Alvin A. Hubbell, M. D., Ph. D., Professor of Clinical Ophthalmology in the University of Buffalo, etc., Buffalo, New York. W. T. Keener & Company, 90 Wabash Ave., Chicago. 1908.

This is a revised and enlarged publication of an address that was delivered in abstract before the section of Ophthalmology of the American Medical Association, June 4, 1907. As all the material is condensed into a book of not quite 200 pages, it is rather sketchy. Many of our American physicians and surgeons, who did eye-work, are referred to and their relation to the general development of special hospitals is interesting. Those in Boston, New London, New York and Philadelphia being among the most noteworthy. The illustrations are good and are numerous, there being about 30 of the interesting men of the period shown.

Acknowledgements

Hygienic Laboratory Bulletin Nos. 40 and 43.
Proceedings of the Pathological Society of Philadelphia.
Insomnia and Nerve Strain, Henry S. Upson, M. D.
Subcutaneous Hydrocarbon Prostheses, by F. Strange Kolle, M. D.
Practical Medicine Series, Volume II, General Surgery.
Hydrotherapy, by Simon Baruch, M. D.
Report of the Commissioner of Health of Pennsylvania.

Ohio State Board of Medical Registration and Examination

EXAMINATION QUESTIONS, JUNE 8, 9 AND 10, 1908

ANATOMY.

1. What is the difference between mucous and serous membranes? 2. What forms the deep palmar arch? 3. Describe the origin, course and distribution of the renal arteries. 4. Describe the different varieties of epithelium. 5. Name the muscles that form the abdominal walls. 6. Name the cavities, openings and valves of the heart. 7. What features of the bony skeleton characterize the sex? 8. What is a ginglymus joint? Give an example. 9. Give the gross anatomy of the liver. 10. Describe the cerebellum.

PHYSIOLOGY.

1. What part of the nervous system is involved in stammering speech? 2. Describe the pneumogastric nerve and its function. 3. Where are the red blood-corpuscles formed and what is their function? 4. Describe lymph. How is it formed? 5. Into what classes is food divided? Give a general description of each. 6. What is the pulse and what do its varieties signify within physiological limits? 7. What are proteids and how are they formed? 8. What physiological conditions influence the secretion of urine? 9. Describe the physiology of menstruation. 10. Where and in what form do the hydrocarbons reach the circulation?

CHEMISTRY.

1. What is the action of a solution of potassium permanganate when used as a disinfectant? 2. Give a simple test for organic impurities in water. 3. Give the reaction of cow's milk and mother's milk. 4. Name the inorganic constituents of the gastric juice. 5. What is the difference between urea and uric acid? 6. Give the formula, properties and uses of hydrogen dioxide. 7. What chemical tests are most important in the analysis of urine? 8. Give the chemical names for cream of tartar, Glauber's salt, Epsom salt, copperas, sugar of lead and common salt. 9. What antidotes should be used in corrosive sublimate poisoning? 10. Name four organic acids and give the sources of each.

MATERIA MEDICA AND THERAPEUTICS (REGULAR).

1. From what is senna obtained? Give some indications for its use and the preparations employed. 2. Name three drugs that may be used to increase the flow of urine. 3. Write a prescription for internal use in a case of chronic eczema of the gouty type. 4. What antidote would you use in a recent case of poisoning by opium taken by the mouth? 5. When should alkalies be given with reference to meals? Why? 6. What are some of the therapeutic uses of ammonium carbonate? How should it be exhibited? 7. Upon what does the therapeutic value of calcium depend? 8. What remedy do you suggest to be used in diabetic coma? 9. Name three styptics. 10. What are some therapeutics aims of the hot pack?

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC).

1. What do you understand by specific medication? 2. What symptoms would lead you to prescribe bryonia? 3. Give the uses and specific indications for collinsonia. 4. What is the common name of apocynum cannabinum? How use the specific medicine? 5. In what class of cases would you prescribe the preparations of cinchona? Under what conditions? 6. Describe a case in which drosera would be the remedy. 7. What are the uses, doses and specific indications of black haw? 8. What is the botanical name of blue flag and what are its uses? 9. What is the specific symptomatology of veratrum? 10. Give the specific symptomatology of asclepsias tuberosa.

MATERIA MEDICA AND THERAPEUTICS (HOMEOPATHIC).

1. What is understood by the totality of the symptoms in prescribing? 2. Give the leading indications for three leading remedies in pneumonia. 3. Give indications for three remedies in catarrhal laryngitis. 4. What symptoms call for antimonium crudum? 5. Give leading indications for lachesia, also for crotalis. 6. What indications call for mercury? 7. What are the leading indications for nux vomica? 8. Give leading symptoms of calcarea carb., silicia and lycopodium. 9. Name three remedies that act especially upon the heart, with indications. 10. Name three emetics with dose.

PHYSICAL DIAGNOSIS.

1. State diagnostic value of decreased resonance of the percussion sound over the lung. 2. State diagnostic significance of dullness or flatness in the left anterior auxiliary line from the sixth to the eighth rib

(Traube's area). 3. What pathological meaning has an amphoric resonance on the chest elicited by percussion? 4. What pathological significance is attached to the cracked-pot sound? 5. In what affections of the lungs is bronchial breathing found? 6. Explain significance of friction sounds. 7. What pathological significance is derived from the enlargement of the superficial abdominal veins (caput medusæ)? 8. What diagnostic significance is given by a frequent pulse (tachycardia)? 9. State pathological significance of the facial paralysis. 10. Describe location and quality of murmurs indicating mitral insufficiency.

PRACTICE AND PATHOLOGY.

1. What points in the microscopical appearance of sarcoma would enable you to make a diagnosis? 2. Describe the technic of rectal alimentation. What foods are used? 3. What symptoms mark failure of compensation in chronic valvular diseases of the heart? 4. What amount of urine is excreted in 24 hours in health? What is its specific gravity? How are each of these influenced in acute nephritis? chronic parenchymatous nephritis? chronic interstitial nephritis? diabetes mellitus? 5. Describe a typical case of typhoid fever from time of infection. 6. Name the exanthemata acuta and give time of eruption of each. 7. What condition does a decrease of hydrochloric acid indicate? (b) an increase? 8. Describe eczema and give treatment. 9. Give the diazo-reaction test. What does it diagnose and prognose? 10. Discuss immunity, giving attention to acquired immunity, to toxin immunity, and to the theories of the nature of immunity.

SURGERY.

1. Differentiate shock and hemorrhage, postoperative, as to diagnosis and treatment. 2. Give surgical anatomy of kidney. 3. Give treatment of compound fracture of upper third of femur. 4. Give indications for operative interference in cholelithiasis. 5. Give treatment of cancer of sigmoid flexure of the colon. 6. Describe a method of lateral intestinal anastomosis. 7. What are the blood findings in pyogenic osteomyelitis? 8. Give indications for enucleating eye. 9. Give common sources of wound infection. 10. Describe resection of shoulder joint.

GYNECOLOGY.

1. Describe the structure of the perineal body. 2. Enumerate three causes for suppression of menses. 3. Differentiate pelvic hematocele from pelvic abscess. 4. What may result from lacerated perineum? 5. Describe the technic of washing the urinary bladder and in what conditions is it indicated?

DISEASES OF CHILDREN.

1. Discuss briefly icterus neonatorum. 2. Write a prescription for modification of cow's milk for a child three months old. 3. Give etiology of otitis media. 4. Give etiology of infantile endocarditis. 5. Give diagnosis and differential features of basilar meningitis.

OBSTETRICS.

1. Describe the blastodermic vesicle. 2. Name some of the causes and some dangers incident to protracted labor. 3. Make a diagnosis of

syphilis of the new-born; state something concerning the prognosis. 4. What conditions contraindicate the operation of version? 5. What changes in the blood are produced by pregnancy? 6. How is labor usually influenced by a kyphotic pelvis? 7. The presenting part is well engaged in the pelvis; the anterior shoulder is felt near the median line; the fetal heart sounds are heard about midway on a line from the left anterior superior spine to the umbilicus; what are the probable presentation and position? 8. What measures would you suggest to overcome uterine inertia? 9. How soon should the cord be ligated? Give your reasons. 10. How recognize tetanus neonatorum?

Medical News

I. J. Kerr has removed his office to 314-315 New England Building.

H. K. Yaggi and **D. A. Prendergast** have opened offices in the Kingmoore Building, 1110 Euclid Avenue.

L. O. Howard, of the Bureau of Entomology, United States Department of Agriculture, delivered an exceedingly interesting address upon mosquitoes before the Case Chapter of the Sigmi Xi Society on Tuesday, May 28, 1908.

The eighth commencement of the Lakeside School for Nurses was held May 28. Malcom Storer, of Harvard Medical College, delivered an address entitled ''The Successful Nurse.'' Thirty nurses graduated and received their diplomas. The exercises were followed by a reception in the nurses' home.

The Medical Era, St. Louis, Mo., will issue its annual series of gastro-intestinal editions during July and August. In these two issues will be published between 40 and 50 original papers of the largest practical worth, covering every phase of diseases of the gastro-intestinal canal. Sample copies will be supplied readers of this Journal.

The Marine Biological Laboratory holds its twenty-first session, June 1 to October 1, 1908. The announcement of facilities for research and instruction for the season of 1908 is about ready. Copies will be sent on application to Professor F. R. Lillie, University of Chicago.

The Stark County Medical Society met in Canton, Ohio, Tuesday, May 18, 1908. The program was as follows: Honesty in Ethics, W. R. Spratt, Malvern; The Dissemination of Venereal Diseases, D. S. Gardner, Massillon; Infant Feeding, J. N. Nelson, Alliance; Acute Articular Rheumatism, with Pyemic Temperature, Treated with Antistreptococcic Serum, W. S. Foulks, Canton; Post-Typhoidal Infection, C. A. Walker, Louisville; Prolapse of the Abdominal Viscera and Pelvic Organs, B. J. Ferciot, Canton; Acute Enteritis, J. B. Dougherty, New Berlin.

The National Volunteer Emergency Service, instituted in 1900, has recently been reorganized by the election of Dr. James Evelyn Pilcher, the distinguished editor of The Military Surgeon, as its Director General, and Dr. F. Elbert Davis, of New York, as its Adjutant General. Its work will be conducted along military lines, the details being worked out in three separate Corps, a First Aid Corps, a Public Health Corps, and a Medical Corps—the latter consisting of physicians, with rank from Lieutenant to Colonel, according to length of service, to whom are afforded special opportunities for emergency training. It includes among its personnel a large number of notable personages, and is rapidly extending its membership throughout the country. Full details regarding the Service and its great work may be obtained by addressing Director General Pilcher at Carlisle, Pa.

The Lakeside Hospital Medical Society met on Wednesday, May 27, 1908. The following patients were shown: A Case of Large Luetic Perforation of the Nasal Septum and a Case Showing the Result of Radical Operation for Frontal Sinus Disease, W. B. Chamberlin; A Case of Rheumatism with Marked Formation of Subcutaneous Fibroid Nodules, B. C. Barnard; A Case of Epithelioma of Penis in a Man aged 28, and a Case of Traumatic Rupture of the Urethra, I. A. Fuhs; A Case of Obscure Arthritis in a Girl aged 13, B. C. Barnard; A Case of Coxa Vera with General Marked Bony Deformity, E. F. Cushing; A Series of Cases of Pericarditis, with presentation of a patient, C. L. Cummer; A Case of Gangrene of the Leg from Thrombosis, Complicating Typhoid Fever, J. R. Beiter.

The following paper was presented: Some Further Experimental Work in Severing the Pelvic Vessels in Bitches and its Bearing on Ruptured Ectopic Pregnancy, Hunter Robb and F. C. Ainley. Presentation of Pathologic Specimens, J. H. Hewitt.

The June meeting was held on Wednesday, June 24. The following patients were shown: A Case of Adduction Paralysis in a Tabetic, W. B. Chamberlin; A Case of Pott's Disease of the Upper Dorsal Region; A Case of Bowlegs with both Anterior and Lateral Curvature, and a Case of Osteomyelitis with Extensive Removal of the Tibia, H. O. Feiss; A Case of Brain Tumor without Localizing Symptoms, C. W. Stone; A Case of Sarcoma of the Antrum Showing the Result of Operative Treatment, I. A. Fuhs.

Report of a Case of Nasal Diphtheria, W. B. Chamberlin. The Use of Sulphosalicylic Acid as a Testing Reagent for Albumen, E. Lowthian. Report of an Interesting Case of Spinal Lues, C. W. Stone. Exhibition of Pathologic Specimens (1) Purpura Occurring in Lymphatic Leukemia. (2) Tuberculosis of Endometrium in a Case of Tuberculous Meningitis. (3) Ball-Valve Thrombus in Mitral Obstruction, J. H. Hewitt.

The Alumni Association of the Medical Department of Western Reserve University held its annual meeting in connection with the sixty-fifth annual commencement of the Medical College, Wednesday, June 10, at the College Building. Following the meeting a banquet was given. It was decided to hold an alumni meeting and have a table hereafter at the banquet during the National meeting of the American Medical Association. The following officers were elected: President, J. G. Spenzer; Vice-Presidents, B. E. Garver and P. King; Corresponding Secretary, E. H. Season; Recording Secretary, J. B. Austin; Treasurer, A. H. Bill. Reunions of the members of several classes were held. The oldest graduate in attendance was a member of the class of 1859, although there are members of classes back to 1844 still living. The total attendance at the Alumni meeting was large and was one of the most successful meetings in recent years.

The sixty-fifth Commencement of the Medical Department of Western Reserve University was held in connection with the Commencement of the other departments of the University on Thursday, June 11. The graduating class consisted of 31 men, being the largest class to graduate for the past five years. The following are the members of the class:

Charles J. Albl, Siegfried Baumoel, Oliver P. Bigelow, A. B., Robert H. Bishop, A. B., Courtland L. Booth, A. B., Jacob G. Brody, Ernest R. Brooks, A. B., Robert S. Campbell, A. B., Samuel C. Hotchkiss, A. B., Archibald N. Dawson, A. B., Perley H. Kilbourne, A. B., John Dorsey Knox, A. B., Elvin L. Lowthian, A. B., William C. Martin, A. B., Brown S. McClintic, A. B., Arnold Minnig, A. B., Rudolph J. Ochsner, B. S., Geo. B. Parisen, B. S., Lawrence A. Pomeroy, A. B., Harley J. Powell, Ph. B., Homer P. Prowitt, B. S., Claude E. Price, A. M., Homer G. Scranton, Henry H. Skinner, A. B., Orvall Smiley, Aron M. Swados, Arthur M. Tweedie, B. L., Charles W. Wendelken, B. S., Cecil O. Witter, B. S., Chauncey W. Wyckoff, A. B., Noah Zehr, A. B.

The majority of these men have received hospital appointments for the coming year.

On Monday evening, May 13, 1908, at the monthly meeting of the Charity Hospital Medical Society, the death of Rt. Rev. Ignatius F. Horstman, D. D., was announced. A special meeting of the Society was called to order, directly after the close of the regular meeting, and the following resolutions were passed.

Whereas: The Rt. Rev. Ignatius F. Horstman, D. D., Bishop of Cleveland, always manifested a deep interest in the welfare of the medical profession, and especially in the various hospitals with which he was affiliated, and gave his personal as well as financial support not only for the relief of suffering humanity but also for the advancement of medical knowledge; and

Whereas: The death of Bishop Horstman is a great loss to the medical profession and to the various hospitals, especially St. Vincent's De Paul Charity Hospital of Cleveland, now be it

Resolved: By the Charity Hospital Medical Society that we do hereby express our appreciation of the services of Bishop Horstman to our Society and Hospital and extend our sincere sympathy and sorrow to those immediately associated with him, and to the Diocese of which he was Bishop; and be it further

Resolved: That these resolutions be inscribed on the minutes of this Association, and a copy of these resolutions be sent to the Administrator of the Diocese of Cleveland.

Deaths

Harry Blackford, of Middletown, died June 8, aged 41.

Benj. F. Cole, of Dayton, died June 6, aged 70.

Kent O. Foltz, of Cincinnati, died June 6, aged 50.

George B. Spencer, of Weston, died May 31, aged 62.

Georgiana Fulton, of Steubenville, died May 17, aged 44.

Albert J. Black, of Montpelier, died May 18, aged 46.

Allan T. Quinn, of Wilmington, died May 19, aged 69.

James H. Hazard, of Cincinnati, died May 24, aged 61.

Jesse C. Mosshammer, of Dayton, died May 27, aged 36.

Wm. P. Madden, of Xenia, died May 30, aged 64.

Robt. D. Connell, of Columbus, died May 31, aged 57.

John A. Royer, of Toledo, died June 14, aged 67.

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Medical Ethics

By FREDERICK C. SHATTUCK,
Jackson Professor of Clinical Medicine in Harvard Medical School, Boston.

The subject of my remarks this evening is not of my choice. It was assigned me by the higher powers for reasons I do not presume fully to understand. I cannot believe that you are peculiarly in need of instruction in medical ethics, and I know that I am not specially qualified to give it; but having from my youth been brought up in habits of obedience I cannot break away from early and long training, and—you must take the consequences.

Of several definitions of ethics in the Century Dictionary, I have selected the following as perhaps best meeting our requirements of the evening as I conceive of them. "Ethics is the doctrine of man's duty in respect of himself and of the rights of others." Ethics thus formulates right conduct and aids us to see the light; but we must constantly strive to be led by it. Intellect and character are very different qualities, too rarely coexistent in their higher degrees in the same person. One or the other may be highly developed, or less or more atrophied, congenitally, from disuse, or both. He whose unclouded vision sees things just as they are, including the right and wrong of almost any and every question may, allowing himself to be dominated by love, ambition, avarice or some other passion, with open eyes choose a low course. Per contra, he whose intellect, which may be acute though narrow, fails to grasp the true relation of things, may,

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An address to the students of Western Reserve University Medical College and the Academy of Medicine of Cleveland, April 25, 1908 subduing all passion and apparent self-interest, act nobly, even if, with a mind more logical than clear, false premises lead to false conclusions. History affords examples of either extreme, as well as a few of that harmonious balance of intellect and character, which, in General Washington, has so impressed the world, and as long as man works upward must remain a living force.

Standards of ethical conduct—that is, conduct which not only tends to the development of individual character but also to that of the well-being of the race—have undergone considerable evolution, the most potent single influence which has been brought to bear upon them being Christianity. "An eye for an eye and a tooth for a tooth" of the Judaic, is supplanted by the offering of the other cheek to the smiter, of the Christian dispensation. Taking the world as a whole, even today, external standards vary enormously with the degree and kind of civilization—and its lack—with the religion and organization of society, the physical peculiarities of a country, the density of population, means of communication and a thousand other things. With us a state of relative fixity has been reached. A homely illustration of the state of flux which obtains elsewhere is afforded by the war-like people of Portugese East Africa, the Masai, dwindling in numbers and in power. When the white man first came into contact with them a few years ago their mode of friendly greeting was to spit in the face of the person greeted. This custom—and every custom has its ethical side—has now given way to the handshake of the European, so Patterson tells us. I have tried to find out the origin of handshaking; but nothing certain appears. There is plenty of theory, but the custom is evidently one of great antiquity and of unknown origin.

The more complex society becomes, the closer knit by applied science, the more organized gains on individual action, the more numerous are the restrictions which must be placed on the individual for the benefit of society as a whole. That which may be perfectly right and proper for the savage, or even for the civilized man in the wilderness, may be highly reprehensible under other conditions. All this may be trite—I shall not complain if you say too trite.

We are all agreed that as men we should so live as to cultivate our intellects, to enlighten our consciences, to strengthen and elevate our characters, and, in as far as in us lies, to promote the well-being of mankind. This is practical ethics. What, then, is medical ethics? Has an adjective any place in ethics?

If so, why? Cannot all practical ethics be summed up in the Golden Rule? Yes and no. It can be so summed up, but rules based on analysis are useful as short-cuts, promoting the rapidity of decision as to right conduct in concrete cases which may seem, or really be, complex. Every calling involves some peculiarities of relation to other persons, which adds to or modifies the restrictions imposed by general ethics. I have heard a stock-broker say that brokers, as a class, are the most honest men in the world, a simple word or nod being absolutely binding. But is not this due to the necessities of the business rather than to a sudden accession of spiritual grace which resides in and emanates from the seat in the brokers' board to each successive owner thereof? Were contracts thus apparently loosely made not inviolable, the business as at present conducted could not be transacted. The peculiarly intimate relations, especially with female patients, involved in the practice of medicine necessitate a very strict standard, lapses from which are less pardonable to the doctor than to men of any other calling save the priesthood. This has been recognized from very early times as we shall see later.

The French law, it would seem very properly, pronounces void a legacy from a patient devised during the illness to the physician in charge of him during the same. Neither in this country, England or Germany is there any such legal provision, and it seems to me to speak well for the integrity of our profession that physicians with us are so seldom legatees of their patients.

History tells us that everywhere in early times the priest and the physician were one, and so it is today among many primitive peoples. In the absence of knowledge superstition rules, and as long as illness is regarded as a demoniac possession the priest is naturally the medicine man and lays down the rules for his conduct. When the mind gets to the point of coldly collecting and collating facts and of recognizing that they are the masters, not the servants, in all matters open to observation and experiment, the care of the soul and of the body cannot remain in the same hands.

The Babylonian Code of King Hammurabi, 2287-2232 B. C., contains 282 sections. Nine of these apply to medicine, four to veterinary medicine. This is, however, a legal code, and the medical sections deal only with fees and penalties. The whole code reveals a remarkable state of civilization at the time, but does not specially interest us here inasmuch as it is legal rather than ethical.

The most ancient statement on medical ethics of which I can get clear trace is the Hippocratic Oath, of about 460 B. C. This oath was taken on entering practice after the completion of the medical studies and runs as follows: "I swear by Apollo, the physician, by Aesculapius, by Hygeia, Panacea, and all the gods and goddesses, that according to my ability and judgment I will keep this oath and stipulation, to reckon him who teaches me this art equally dear to me as my parents, to share my substance with him and relieve his necessities if required, to look upon his offspring on the same footing as my own person, and to teach them this art if they shall wish to learn it without fee or stipulation, and that by precept, lecture and every other mode of instruction I will impart a knowledge of this art to my own sons, to those of my teachers and to disciples bound by a stipulation and oath, according to the law of medicine, but to no others. I will offer that system of regimen, which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel, and in like manner I will not give a woman a pessary to produce an abortion. With purity and with holiness I will pass my life and practise my art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption, and further, from the seduction of females and males, of freemen and slaves. Whatever in connection with my professional practice, or not in connection with it, I see or hear, I will not divulge, as reckoning that all such things should be kept secret. While I continue to keep this oath inviolate, may it be granted to me to enjoy life and the practice of my art, respected by all men at all times; but should I trespass and violate this oath, may the reverse be my lot."

Charaka,[1] dating probably, as I am informed by Professor Lanman, from about 100 A. D., deals at some length with medical ethics and the mutual relations of pupil and teacher. It is too long to give in full, but I permit myself to make some extracts, calling your attention to the fact that this ancient Indian oath

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(1). Charaka-Sahmita, Calcutta, W. C. Samanta, 200 Cornwallis' Street.

was administered to the pupil about to enter on the study of medicine, not at the end of his pupilage. We note the stress which is laid on the physical perfection of the candidate, and remember that such, in a limited way, is a pre-requisite to admission to the Romish priesthood. After setting forth what constitutes a good treatise to select for minute study a list of the qualifications desirable in the preceptor are enumerated. "Approaching such a preceptor, the pupil desirous of courting him should attend on him with heedfulness like one revering one's sacrificial fire, or one's deity, or one's king, or one's father, or one's patron." A very proper attitude of pupil to teacher, not always observed at the present day.

Next come the qualities of the pupil:

"He should be of a mild disposition.
He should be noble by nature.
He should not be mean in acts.
His eyes, mouth and nasal line should be straight.
His tongue should be thin, red and unslimy.
His teeth and lips should have no deformity.
He should not have a nasal voice.
He should be possessed of intelligence.
He should be free from pride.
He should be endued with a large understanding.
He should have power of judgment and memory.
He should have a liberal mind.
He should belong to a family the members of which have studied the medical scriptures or followed medicine as a profession.
He should have a devotion for truth.
He should not be defective in respect of any limb.
He should have all his senses perfect.
He should be disposed for solitude.
He should be free from haughtiness.
He should be of a thoughtful disposition.
He should be free from those faults which go by the name of Vyasana."[1]

Then follow elaborate ceremonies which are gone through with, so interesting and curious that I wish we had time for them in full. And finally, the perceptor formulates, as it were, a code, the acceptance of which is a pre-requisite to pupilage.

"If thou desirest to achieve success of treatment, earn wealth, acquire celebrity, and win Heaven hereafter, thou

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(1.) Certain habits and acts go by the name of 'Vyasana.' They are hunting, gambling with dice, sleep during day time, speaking ill of others, infatuation for women, excessive addiction to singing, dancing and instrumental music, purposeless sauntering, and others of a similar nature. The Hindu Scriptures abound with exhortations to avoid them. In the case, especially, of a Brahmacharin (pupil living in the house of his preceptor), their avoidance is doubly incumbent.—T.

shouldst, reverencing kine and Brāhmanas above all, always seek, whether standing or sitting, the good of all living creatures.

Thou shouldst, with thy whole heart, strive to bring about the cure of those that are ill.

Even for the sake of thy life thou shouldst not drain those that are ill[1].

Thou shouldst not, even in imagination, know another man's wife.

Thou shouldst not, similarly, appropriate other people's possessions. . . . . .

Thou shouldst not keep any connection with publicans, or sinful men, or with those that are abettors of sinful behaviour.

Thou shouldst speak words that are soft, unstained by impurity (obscenity) fraught with righteousness, incapable of giving pain to others, worthy of praise, truthful, beneficial and properly weighed or measured.

Thou shouldst always conduct thyself taking note of place and time. . . . . .

While entering the family dwelling-house of the patient, thou shouldst do it with notice to the inmates and with their permission. Thou shouldst (at such times) be accompanied by some male member of the family. Thou shouldst cover thy person properly. Thou shouldst (while entering) keep thy face downwards. With thy wits about thee, thou shouldst, with understanding and mind properly fixed, observe all things. Duly conducting thyself in this way thou shouldst enter (the dwelling-house of the patient).

Having entered, thou shouldst not devote thy words, mind, understanding, and the senses to anything else than what is calculated to do good to the patient, or to any other subject connected with the patient (than his recovery).

Thou shouldst never give out (to others) the practices of the patient's house."

Please note specially the following:

"There is no end (to reach) of Medical Science. Hence, heedfully, thou shouldst devote thyself to it. * * * Then, again, skillfulness of practice should be acquired from others, without feeling any humiliation.

(1.) I. e., suck out or extort their substance. A little may be taken, but not much.—T.

Unto men possessed of intelligence, the entire world acts as a preceptor.

Unto men destitute of intelligence, the entire world occupies the position of an enemy."

At the expense of chronology I will here give the oath which today must be taken in Egypt before entering into practice:

"I swear in the name of God, the Most High, and of his sublime prophet, Mohammed, whose glory may God increase, to be faithful to the laws of honor, honesty and benevolence in the practice of medicine. I will attend to the poor gratuitously and never exact too high a fee for my work. Admitted into the privacy of a house my eyes will not perceive what takes place. My tongue will guard the secrets confided to me. Ever respectful and grateful to my masters, I will hand on to their children the instructions which I have received from their fathers. May I be respected by men if I remain faithful to my vow. If not, may I be covered with shame and despised. God is witness to what I have said. The oath is finished."

In the Langobard Code, A. D. 650, we find: "Whosoever has inflicted wounds upon anyone, he shall supply him with attendance, and likewise pay the fee of the physician at a rate to be estimated by learned men." (Not by physicians, however). Physicians were made responsible for their want of skill. Their fees were stipulated in advance.

An old Germanic Legal Code dates from about 1400. A part relating to medicine reads as follows:

1. "No doctor can bleed a woman in the absence of her relatives. If he does so, he must pay 10 solidi (one solidus equals $2.25) to her husband or relatives, since it is not impossible that occasionally some sport may be associated with such an opportunity. (Carnal offenses were very severely punished, often by castration) . . . .

3. Doctors must take charge of sick people under definite security.

4. Having done this, he must cure them. If death ensues, he shall not demand the stipulated fee, nor shall suit be instituted for it by either party.

6. If a doctor has injured a nobleman by bleeding him, he shall pay 150 solidi. If the patient dies, the doctor is delivered up to his relatives to be dealt with as they see fit." Realizing this state of affairs and the risks which they ran from this law, in all cases in which they thought that the patient might die, the physi-

cians had their patients declared dead by legal form before instituting any treatment or taking charge of the case, so if death really took place, they would not be punished.

After that time, various small states and principalities in the German Empire formed codes, notably Prussia in 1625.

The morality inculcated in the ancient codes and oaths is very high. Good character, good morals and professional secrecy are requisites common to all. The low state into which medicine had fallen during the Middle Ages is reflected in the codes and regulations of the times. Doctors too often had neither attainment nor character and it was deemed necessary to protect the community against them.

As the Roman Empire declined and fell, learning of all kinds went into the long sleep of the Middle Ages, as did ethics and medicine, and the physician and the priest were again united, this time in the person of the monk. The influence of Greek thought was active only among the Arabs who thus played their part in preparing the way for the Renaissance. Among the Greeks, medicine was a part of philosophy, in the Middle Ages of theology, and physicians were not classed among learned men. Some of the higher clergy of the Benedictine monasteries seem to have been men of learning and to have been interested in medicine; but the medical teaching, which, in the ninth century gave the name of Civitas Hippocratica to Salernum and which developed into the university of that place in 1150, seems to have been purely secular. The monks as a class preserved literature though they added little or nothing to exact knowledge. The Benedictines, however, gave special attention to illness and some of them seem to have possessed medical as well as general learning.

It is interesting to remark that the origin of the first European university was its medical school. To Salernum went William of Normandy, afterwards the Conqueror, in quest of health, which his subsequent career would seem to show that he regained. Frederick the Second, Emperor of Germany, 1194-1250, included in some ordinances relating to practitioners a provision that no one should be allowed to bear the title of physician unless he had passed the examination at Salernum.

But we must hurry on, great as is the temptation to linger. The history of medical ethics is inseparable from the history of medicine, and broadly speaking, no real progress in ethics can take place without antecedent progress in medicine.

During the seventeenth and eighteenth centuries the system-makers, from Van Helmont to Hahnemann, were dominant, the resurrection of ancient literature leading at first to a blind reverence for authority, especially that of Galen, and the expenditure of brains often worthy of better things on hypothesis rather than on observation and experiment. Finally, the foundations of real progress were laid by Harvey, Sydenham and John Hunter, to select the great names of England alone. During the reign of the system-makers the lack of respect in which physicians were held, and part of the reason therefor, are reflected in the literature of the times and in the unseemly—to use a mild word—professional wrangles of the day. Contrast the attitude of Molière toward doctors of physic with that of writers for the modern stage. A class, as well as an individual, must respect itself to win the respect of others. Too many of the leaders of the profession, garbed in a long, velvet-lined doctor's robe, later with peruke, cane and sword were mere pedants at the best, though they assumed the air of savants, and deemed it beneath their dignity to render other services to the sick than give dogmatic advice and write elaborate prescriptions. They took themselves very seriously. Perchance, had medicine stood higher in popular estimation, Rabelais, Smollett and Goldsmith might have been lost to literature. Rabelais was for fifteen years a monk, the last five years a Benedictine. The relation of the Order to medicine has already been spoken of. Had Rabelais not left the Franciscan for the Benedictine Order, would he have turned to medicine? Richard Mead, Doctor of Philosophy and Physic of Padua, later M. D. of Oxford, author among other works of "The Dominion of the Sun and Moon over the Human Body, and of the Diseases Thence Arising," the successor of Radcliffe in fashionable London practice, was bitterly attacked by Woodward, Professor of Physic in Gresham College, in print, and so rudely treated by him in public that Mead drew his sword and a duel was fought then and there. Mead disarmed Woodward and bade him beg for his life. "Never till I am your patient," was Woodward's witty reply. Later, Mead was literally chased down the grand staircase by Sarah, Duchess of Marlborough, who, offended by some remark of his at her bedside, jumped out of bed and pursued him with the purpose of pulling off his wig and throwing it in his face. Try to imagine such a thing in London today!

The duel between Doctors Bennett and Williams in the eighteenth century was a forerunner of similar events at a much later period, of events not quite unknown today south of Mason and Dixon's Line. A pamphlet quarrel led to blows, and then to a challenge from Bennett, declined by Williams. Bennett then called on his confrère and called him a coward. Williams opened his door himself and shot Bennett with a pistol and swan shot in the breast. Bennett retreated across the street to a friend's house, followed by Williams who shot again and then ran him through with his sword. Bennett managed to draw his sword and ran Williams through the chest and scapula, the sword breaking off short. Williams died before he could reach his house, Bennett in four hours.

In 1830 took place near Philadelphia a duel between Dr. Smith and Dr Jeffries with pistols. Shot one at eight paces a miss; shot two breaks Smith's right arm; shot three wounds Jeffries in the thigh, causing him to bleed profusely. Bandages and brandy put him in condition for shot four, which, the men being only six feet apart, was fatal to both.

One more, and less tragic, illustration of the ethics of the time.

Wynter, English and fond of wine, and Cheyne, Scotch and an advocate of milk, rivals at Bath, exchange compliments as follows:

Dr. Wynter to Dr. Cheyne.

Tell me from whom, fat-headed Scot,
Thou didst thy system learn?
From Hippocrate thou hadst it not,
Nor Celsus, nor Pitcairn.

Suppose we own that milk is good,
And say the same of grass;
The one for babes is only food,
The other for an ass.

Doctor, one new prescription try
(A friend's advice forgive),
Eat grass, reduce thyself, and die,
Thy patients then may live.

Dr. Cheyne to Dr. Wynter.

My system, doctor, is my own,
No tutor I pretend;
My blunders hurt myself alone,
But yours your dearest friend.

Were you to milk and straw confined,
Thrice happy might you be;
Perhaps you might regain your mind,
And from your wit be free.

I can't your kind prescription try,
But heartily forgive;
'Tis natural you should wish me die,
That you yourself may live.

If there are pessimists among us, let them read of past times. The fundamentals of human nature do not change. Fashion is still potent and always will be. But self-restraint has increased and the fire of passion is less easily lighted in those who are humbly trying to observe the facts and learn the laws of nature than in those whose pride and feelings become enlisted in the advocacy of a hypothesis or a theory. Contrast the attitude of the profession at large toward inoculation and vaccination, and toward every innovation of past time, with that toward Pasteur, Koch, Lister and other revolutionists of modern times. Contrast the doctor of the stage and fiction in past and present times. Doctors of Medicine still differ, for medicine is not an exact science though it is coming more and more to rest thereon. But now when they differ they do so temperately, recognizing that there is fair ground for difference of opinion in many matters. Doctors of Law are paid to differ. The differences of Doctors of Divinity, to whom the proverb that doctors differ was probably first applied and who have succeeded in sloughing it off on us, are patent, and led to the horrors of the Inquisition and the Reformation but are now relatively as mild as milk. Our manners are not always good. In some respects they are inferior to those of earlier times, when the liability to be called to account in a duel, made men careful, often ceremonious, even if modesty and respect for the rights of others were lacking. But we are, in the main, far more tolerant in differences of opinions, more open to conviction, far less acrimonious in expressing our differences. Codes of medical ethics have grown shorter and simpler, where they persist, as in my own State. The very word "Code" has been dropped by the American Medical Association which prints a statement of the "Principles of Ethics" comprising helpful suggestions as to the relation of physicians to their patients, the public and one another. The British Medical Association has no Code. Ethical conduct is promoted by education, culture; example, not easily enforced on the unwilling by law, so full of loopholes for those in search of such. The laity is gradually learning that "professional etiquette," which it has characterized as inhumane, selfish, absurd, in truth rests primarily on the interest of the patient, only secondarily on that of the doctor. The relation of doctor and patient is such, such the interaction of mind and body, so largely does mere perversion of function represent, modify, or complicate definite disease, that the confidence of the patient in the knowledge, skill and character of his physician is always a very important element in the care—

not infrequently an indispensable element in the cure—of the sick. It is harmful to the character of one physician to directly or indirectly sap the confidence reposed in a professional brother. It is harmful to the usefulness of the profession at large so to do. It is harmful to the sick man. A dignified silence or reserve as regards quacks, even notorious quacks, is, as a rule, wise. We should certainly not go out of our way to break such silence. A certain proportion of the community is always ready to worship false gods, a larger proportion to be temporarily led astray. But as Mr. Lincoln is reported to have said "you can't fool all the people all the time," and in the long run truth prevails. The length of this run is shortened by absolute honesty in thought and deed on our part, by freedom from affectation of power and knowledge which we do not possess, by an attitude of mind which welcomes and recognizes progress, even though it may seem to clash with our personal interests at the time. Most of the ridicule which was unsparingly dealt to our profession in past times was richly earned by the assumption of so many of its members. The gold-headed cane, a portentous gravity of manner, a peculiarity of dress, other than that of scrupulous neatness, are trivialities which have had their day, like the proverbial dog. These particular trivialities are not likely to be reincarnated, but let us heed that other more subtle, and perhaps less venial, trivilities do not take their place.

The philosophy of life has been well, even if profanely, summed up in the advice of the Missouri father to his son: "So live every day that you can look any damned man in the eye and tell him to go to hell." Note that the latter part of the injunction is permissive, not mandatory. The important thing is the mode of life. The exercise of the privilege is secondary, subject to the inhibition of modesty and common sense. Duty is ever paramount. The right which is attached thereto it may be better for us not to insist upon, and then only with careful regard for time and season.

Every rose has its thorn, and one of the thorns of the lovely rose of the practice of medicine is that the daily work of the physician brings him so much in contact with his inferiors, that is, with those who defer to his judgment. He thus comes in danger of being opinionated, intolerant of difference of opinion. Efficient antidotes to this toxin are an active share in medical meetings and the careful reading of at least one first-class medical journal of general scope. I have in mind more than one physician practising in small communities who make time—I know not how, save as a triumph of mind over matter—to do these things, and I don't find these men the least ethical of the profession in their localities. We physicians must not only hold our tongues, but, more than men of some other professions, must shut our ears to tales, whether idle or malicious, either of the shortcomings and mistakes of fellow practitioners, or of remarks attributed to doctors or patients and derogatory to us. Such things should, in the vast majority of cases, pass us as the wind which we regard not. There are diseases which are communicated only through insects, which, meantime, do not seem to suffer themselves. A perfectly innocent remark, certainly in intention, may acquire virulence either in passing through one or more human infected insects, or only when planted on the culture medium of the jealous and suspicious mind of the person to whom it is said to have been applied. Is it not a safe rule, to credit others with the same good will and intentions which we of course possess ourselves? To assume as a general rule that evidence to the contrary is worthless? It seems to me that most people mean to do right. That most offences are not intentional, but are, at the worst, due to thoughtlessness. Is it not, therefore, well, if we believe we have good reason to think ourselves aggrieved to have a frank talk with the aggriever unless we know his character to be bad? In that case his opinion of our utterances or deeds is of no account. It is not a good plan to write. The written word offers many chances for misconception. The result of a temperate personal interview will generally show that there is no real ground for offense, that the alleged statement was either never made, or if made, was quite misunderstood, and the result of the interview may well be to make the interested parties better friends than they were before. A grievance is even more dangerous to harbor in the bosom than a serpent. The latter cannot do anything worse than kill the body, and that quickly; but the grievance is like a vigorous parasite, which fastens on and perverts or stunts the soul.

There is one conspicuous feature in which the ethics of medicine differ from that of nearly every other calling. The inventor of a machine, or of a process of manufacture, or a device, can patent it and receive legal protection, and receive all the emoluments directly flowing from the invention. It is considered good public policy thus to stimulate human progress by what is virtually a tax or bounty paid by the community. So also human thought embodied in the printed book may be copyrighted. The chemist who discovers a new compound may patent it and protect it further by a trade-mark. There is nothing in either the common or statute law to prevent a physician from patenting an instrument, or from, in some other way, acquiring proprietary rights. Here, however, medical ethics steps in and commands that the physician extend freely to all any invention or discovery he may make in the domain of medicine. Illness is part of the order of nature, incident to all, liable, like the rain from Heaven, to fall upon the just and unjust, the innocent and guilty much alike. No one is compelled to buy a patented article, for which some kind of substitute is practically always ready—perhaps not as good—but still serviceable. Health and its preservation are matters of such universal and vital import that the profession of medicine itself has decided that its members must forego anything like proprietorship in progress. The Bowles stethoscope is patented and is therefore expensive. Conduct and a profit allowable to Mr. Bowles would not be allowable were he Dr. Bowles.

To the doctor in love with his profession Heaven may sometimes appear as a place where he can exercise his calling without the necessity of taking fees—a fully endowed, organized and equipped hospital, if you will. Fees are the plague of a physician's life, although in the present organization of society, a necessary plague. The price of medical attendance cannot be fixed and uniform to anything like the degree that obtains with other human necessities. He who cannot afford the first cut of beef suffers no real loss or hardship from the second or third. A skilful manager can feed himself or a household sufficiently and wholesomely at small expense. There are those among us who would be the better for taking the advice of Abernathy to the nobleman: "earn a sixpence a day and live on it." So also large expense is not needed to cover our nakedness and protect us from the weather. It is only the rich man, however, who can afford to indulge in second or third rate doctoring. Health is everything to the wage-earner and small salaried man, whose family depends on his daily returns. The poorer a man, the more does he need a good doctor. And it may safely be said that the poor in hospitals are often better attended than the rich in their "palatial residence" as the newspaper says. The poor man is often more thoroughly studied, and therefore probably more intelligently treated. In my own state I know one town, where, there being no poor, the poorhouse is rented and thus brings revenue to the town. In such a community fees can be tolerably uniform. Fee tables have their use as representing the minimum which should be charged to those able to pay for attendance. It is neither for the interest of the laity nor of the profession that fees should be cut for any reason other than the inability of the patient to pay. I have heard a medical friend state with pride that he had never taken a dollar fee. This seems to me a mistake. If a patient can afford a dollar and cannot afford more, is it not wise to accept it? The self-respect of the patient is preserved and the advice is likely to be of more service.

The maximum fee seems to me unlimited, provided that it be agreed upon beforehand. Unless it be so agreed upon, a rich man should not be charged an unusual fee for a usual service. Lawyers are apt to gauge their fees by the amount of money involved, especially to corporations. Some of them thus receive compensation which makes our hair stand on end. They deal with definite sums of money, we with the inestimable values of life and health. They render services which, as a whole, can be measured in money, we services which very often cannot be measured by that standard. I have heard a very eminent lawyer claim great credit for the legal profession, in that no lawyer takes from any man any more than he has. Remember the injunction of Charaka not to drain the patient.

I repeat that fees are a plague. We are so often at a loss how much to charge and cannot avoid some mistakes. There is greater danger of underrating the ability of the patient to pay than there is of overvaluing our services. Then again, there is the plague of collection. It is not every bill which is settled by a check in the return mail. There are those who try to cheat—and who succeed. But it seems to me that, on the whole, people pay their just debts fairly well, and we must offset those who do so with grateful recognition with those who do so grudgingly, tardily or not at all.

Cannot we abridge the Golden Rule simply into "Let us be gentlemen."

Let us possess our souls in peace when we find that there are those who are not gentle folk, pursuing the even tenor of our way and cultivating that precious quality of equanimity, the merits of which have been so well set forth by William Osler.

Robert Louis Stevenson, who surely had the opportunity to suffer many things from many physicians, and therefore should know whereof he speaks, says: "the physician is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably anticipated the virtues of the race."

The Nervous Control of the Production of Sugar in the Animal Body

By. J. J. R. MACLEOD.

The remarkable discoveries by von Mering and Minkowski of pancreatic and phlorizin diabetes have, in recent years, tended to throw into the shade those forms of experimental glycosuria which have been considered to depend on some change in the central nervous system. The so-called puncture diabetes and the reflex glycosurias of Claude Bernard and Eckhard have scarcely received any attention by investigators within recent years.

For sometime past we have been engaged in my laboratory in researches dealing with a study of this latter phase of the subject, or more particularly with the amount of reducing substance in the blood and urine as influenced by the stimulation of various afferent and efferent nerves. Although the subject is one which can in the stricter sense scarcely be called gastro-enterological, yet I believe that some of the results may be of interest to such a society as this, especially since the mechanism involved in bringing about changes in the production of dextrose in the animal body resides, in large part, in the glycogenic function of the liver.

I should perhaps further state, by way of preface, that in his well-known monograph on carbohydrate metabolism, entitled "Das Glykogen," Pflüger* has clearly brought out the fact that there are many forms of glycosuria, experimentally induced by partial removal of the pancreas, which, when carefully studied, exhibit no features warranting their being considered as of closer relationship to the severe diabetes which follows complete pancreatic extirpation than to that produced through the nervous system. Indeed, Pflüger would go further even than this, for he believes that the diabetes following complete depancreatation is not essentially different from that induced through the nervous system.

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*Pflüger: Das Glykogen. Bonn, 1906.

Read before the American Gastro-Enterological Association at Chicago, Ill., June 1, 1908

The part of my researches which I have chosen for the present communication concerns the existence in the greater splanchnic nerves and fibres which control the production of reducing substance by the liver. That direct stimulation of this nerve has any effect in producing glycosuria was denied by Eckhard,* although he and others noted, after section of the splanchnics on both sides, that piqûre was not followed by the usual glycosuria. The Cavazzani brothers,† however, found that stimulation of the cœliac plexus caused a marked rise in the reducing power of the blood of the hepatic vein, and a great reduction in the amount of glycogen in the liver.

In my first experiments, the splanchnic nerves were cut on both sides and the peripheral end of one then stimulated by the induced current: no hyperglycæmia was found to result. It had, however, previously been noted by me when the mean arterial blood-pressure has been lowered from any cause, that it is impossible to obtain constant results regarding the percentage of reducing substance in the blood and, naturally, section of the splanchnic nerves produces a marked fall in blood-pressure.

It was then decided to try the effect of stimulation of the splanchnic nerve on one side (the left) without cutting either nerve. In fourteen (14) experiments of this nature, the reducing power of the blood was found markedly raised in eleven (11) but not affected in the remaining three (3). In some cases the increase in reducing power was very striking, *e. g.*, up to 0.433 percent, while in others a less marked hyperglycæmia was obtained. The above result was noted in about 30 minutes after commencing stimulation of the nerve.

Observations were also made on the urine, particularly its rate of formation and its percentage reducing power. It was found, in most cases, that both of these increased parallel with the reducing power of the blood, as is shown in the curves plotted from a typical experiment, and given in Fig. 1.

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*Eckhard; Beiträge, 1869, IV, p. 4.

†Cavazzani: Archiv für die gesammte Physiologie, 1894, LVII, p. 181; Cavazzani frères: Archives Italiennes de Biologie, 1893, XIX, p. 270.

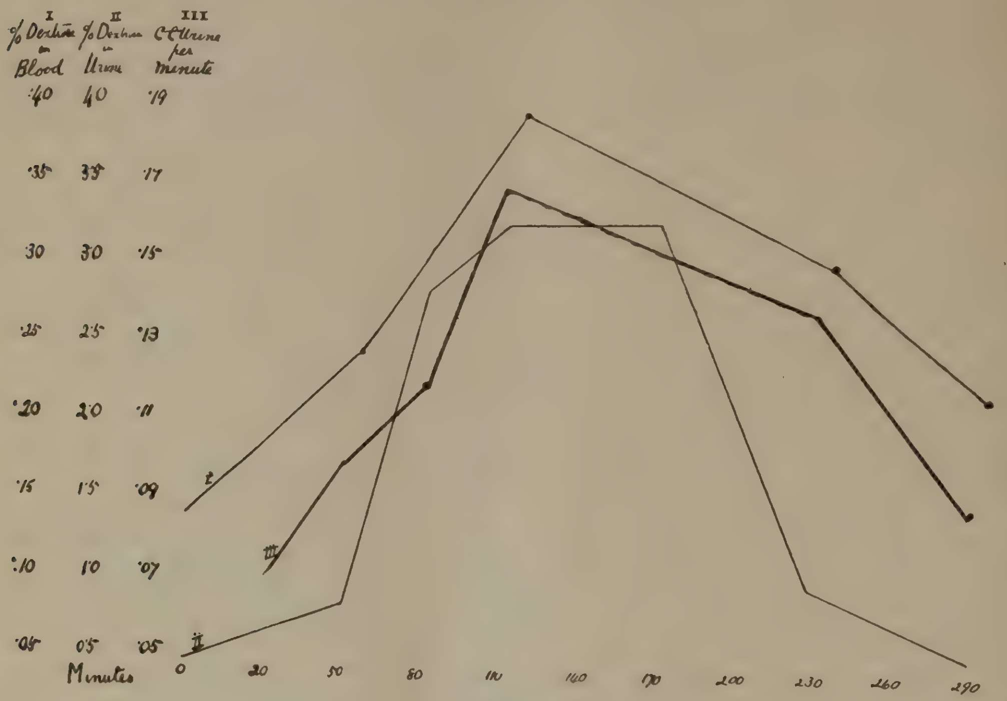

FIG. I.

The above result led naturally to the next step in the investigation, viz., *the exact nature of the fibres in the great splanchnic nerve concerned in the regulation of sugar production by the liver.*

It is conceivable that the hyperglycæmia produced by stimulation of these nerves might be accounted for by:

1. Afferent stimulation (possibly through the vagi) of the medullary centers controlling the respiratory movements; or, of the so-called diabetic center.

2. Stimulation of vasomotor (constrictor) fibres, leading to disturbances in the hepatic circulation.

3. Stimulation of secretory fibres regulating the production or activity of *glycogenase* in the liver.

We shall now very briefly proceed to discuss each of the possibilities.

I. STIMULATION OF AFFERENT FIBRES CONNECTING WITH THE MEDULLARY CENTERS

It is a well known fact that stimulation of the great splanchnic nerve in the region of the suprarenal capsule frequently affects the respiratory movements. Such interference may sometimes itself be followed by hyperglycæmia and in this way, as I have shown,* is to be explained the hyperglycæmia following stimulation of the central ends of nerves, such as the vagus, which contain afferent respiratory fibres. The hyperglycæmia thus induced can, however, be invariably prevented by ventilating the lungs with pure oxygen gas; whereas, such a procedure does not prevent the increase in reducing power of the blood as a result of stimulation of the splanchnic nerve. It must be pointed out, however, that although it does not prevent the hyperglycæmia, yet in animals thus treated the hyperglycæmia is commonly not so marked as otherwise.

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*Macleod: The American Journal of Physiology, XIX, 1907, p. 388.

When the hepatic branches of the cœliac plexus are cut and the splanchnic nerve then stimulated no hyperglycæmia is found to result, although in such cases the effect on the respiratory movements occurs as readily as if these nerves had been intact. In considering this experiment as evidence against the afferent nature of the fibres, it must, of course, be borne in mind that all nerve connections to the liver have been severed and that, therefore, the glycogenolytic function of this organ has been removed from under nervous control. It is commonly believed, however, that respiratory interference leads to hyperglycæmia more probably by disturbing dextrose consumption than by causing an increased output from the liver.* Since, however, this is not as yet an established fact, the above proof must be considered as provisional.

Stimulation of the peripheral ends of the cut hepatic nerves causes marked hyperglycæmia in 50% of the cases. The negative results in half the cases are to be accounted for by the fact that, in my experiments, no attempt was made to dissect out the individual nerve fibers, but the electrodes were tied around the mass of nerve-containing connective tissue running to the hilus of the liver after it had been dissected free from the portal vein and cut between mass ligatures. In certain cases therefore most, if not all, of the electric current must have been short circuited through connective tissue. For purposes of the above argument, however, a positive result in half of the cases is sufficient to warrant the conclusion that the hepatic nerves contain efferent fibres which influence the sugar production in the liver and this fact lends support to the belief that the fibres in the great splanchnic nerve are of similar nature.

II. STIMULATION OF VASOMOTOR FIBRES LEADING TO DISTURBANCE IN THE HEPATIC CIRCULATION

However produced, asphyxia is associated with hyperglycæmia. Thus, as explained above, interference with the respiratory movements by stimulation of sensory nerve fibres causes it, as do also such drugs as nicotin, pipiridin, ether, morphin, etc., which act on the respiratory center. Disregarding, for the present, the exact mechanism leading to this result of asphyxia, we may nevertheless admit the possibility that a local asphyxia of the liver would likewise cause an abnormally rapid glycogenolysis with a consequent hyperglycæmia. Such a local asphyxia of the hepatic lobule would, of course, follow constriction of the supplying blood-vessels, and by means of such a mechanism as this, it might be, that splanchnic stimulation causes hyperglycæmia.

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*Underhill: Journal of Biological Chemistry, Vol. I, p. 126, 1905-06.

That such, however, is not the case, I have shown by the study of the behavior of the reducing power of the blood after ligation of the hepatic artery, and after temporary clamping of the portal vein. By neither of these operations is hyperglycæmia induced, unless when, in the latter case, the vein is clamped for longer periods of time than two minutes. Under these latter circumstances hyperglycæmia follows, but the marked lowering of arterial blood-pressure which results from prolonged clamping is, as explained above, an interfering factor, so that the experiments in which the clamping is for so long a period of time are not of very much value in connection with the present discussion. The establishment of an Eck fistula (anastomosis of the portal vein to the inferior vena cava) is not followed by glycosuria* nor does thrombosis of the portal vein have such a result. It may seem to you inconsistent that prolonged clamping of the portal vein should cause hyperglycæmia, whereas complete removal of the portal blood from the liver, as is brought about by Eck's operation, should not do so. A little consideration of the exact conditions in the two cases, however, offers a satisfactory explanation; for, in the one of these (*i. e.*, temporary clamping of the vein) the sugar which has accumulated in the liver as a result of prolonged removal of the portal blood is immediately afterwards flushed into the systemic circulation: whereas, in the other (*i. e.*, Eck fistula), such is not the case, the sugar being so gradually removed from the liver that it does not overwhelm the blood and therefore does not cause hyperglycæmia.

By a process of exclusion, therefore, we are driven to conclude that the nature of the above fibres in the great splanchnic nerves must be secretory. They must be fibres which control the production or the activity of glycogenase, the amylolytic ferment of the liver. It is, of course, a very difficult matter to furnish direct evidence of the truth of this conclusion. In the case of glands such as the salivary and gastric, whose activities are undoubtedly to a large extent under nervous control, observations on the rate of secretion is all that is necessary to furnish the desired evidence, but in the case of glycogenase production by the liver, we are compelled to judge of its rate of production by the effect which it has in influencing the output of dextrose by this organ.

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*Macleod: Art. "Eck's fistula"; Pathological Studies. Quatercentenary Publications, Aberdeen University, 1905.

Many secretory mechanisms under nervous control are paralyzed by the administration of atropin. I have found, however, that atropin does not interfere with the above described effect of stimulation of the splanchnic nerve. Such a result cannot, of course, be taken as negative evidence of the existence of glycogenase secretory fibers, for the mechanism here involved is more akin to that of a ductless gland, on the supposed secretions of which atropin has no effect.

It was further attempted to decide the question by making a comparison of the amount of glycogen in the liver of the turtle before and after stimulating the spinal cord. In the large snapping turtle the liver is of large size and consists of two lobes joined together by a narrow bridge of liver substance. One of these lobes was, first of all, removed, a shoe lace being tied around the stump as a mass ligature to prevent hemorrhage, and its glycogen content determined by the method of Pflüger.* The spinal cord was then stimulated with the faradic current for one hour, after which the glycogen was determined in the remaining portion of liver. No conclusive results could, however, be obtained.

Finally, experiments were conducted dealing with the glycogen content of portions of the liver of the dog removed after anastomosing the portal vein to the inferior vena cava. By diverting the portal blood in this way, very little hæmorrhage attends removal of a lobe of liver, provided that the stump be enclosed in a flat mass ligature (shoe lace). In one series of observations, the glycogen was determined by Pflüger's method, in a piece of liver (about 20 gr.) removed immediately after making the fistula and in another piece removed one hour later. In another series of observations, the great splanchnic was stimulated in the interval between removal of the two pieces of liver. It was found that when the anastomosis had been readily established, and the blood-pressure had recovered well after the operation, that with no stimulation of the splanchnic nerve the percentage rate of glycogenolysis in one hour in two experiments was 24.3 and 22.6.* In two other experiments without stimulation, but in which there was low mean arterial blood-pressure after establishment of the anastomosis, the percentage rate of glycogenolysis was 40 and 74.1. In four experiments in which the splanchnic nerve was stimulated for one hour after making the anastomosis, the percentage rate of glycogenolysis was 70, 100, 89.2, 83.1 and 39.4 and in one experiment in which the first piece of liver was removed in one-half hour after making the anastomosis, and the second in one-half hour later—during which time the nerve was stimulated—the above value stood at 50.8.

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*Pflüger: Archiv. f. d. ges. Physiologie. Bd. CXIV, S. 231, 1906.

It will be seen that a distinctly more rapid disappearance of glycogen occurred when the nerve was stimulated.

The only circulation through the liver in these experiments is that of the hepatic artery. When the mean arterial blood-pressure is greatly lowered by the operation, then the hepatic artery blood-supply is insufficient to prevent a glycogenolysis similar to that seen immediately after death (postmortem glycogenolysis). In such cases, therefore, a high percentage glycogenolysis is observed in one hour. With good blood-pressure on the other hand, the hepatic arterial blood-supply is sufficient to prevent the advent of postmortem glycogenolysis and a low percentage change is observed.

When with good blood-pressure the splanchnic nerve is stimulated there will result a constriction of the hepatic artery which, according to the above argument, must, by diminishing the arterial blood-supply to the liver, tend to accelerate glycogenolysis. In our results, however, the rate of this has been found, on an average, distinctly greater when the splanchnic nerves were stimulated in animals with good blood-pressure than it is in those cases with low arterial blood-pressure but no stimulation of the splanchnic nerve; which fact, can, of course, mean only one thing, viz., the presence of true glycogenase secretory fibers in the greater splanchnic nerve.

These last mentioned experiments present, however, one serious fault, viz., that the rate of glycogenolysis in the liver in the stimulated cases is compared with this rate in the liver of another animal in which no stimulation is practised. It might be claimed that the differences observed are merely accidental, since the rate of glycogenolysis varies greatly in the livers of different animals. We are at present engaged in another type of experiment which will remove this objection, but the results are not yet ready for publication. After establishing the Eck fistula, a piece of liver is removed; the animal is left undisturbed for 30 minutes when another piece of liver is removed, the splanchnic nerve is then stimulated for another 30 minutes, at the end of which time a third piece of liver is removed. Glycogen estimations are made on the three pieces of liver and the rate of its disappearance compared for the first or resting half hour and for the second or stimulated half hour.

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*This value is obtained by subtracting the percentage amount of glycogen found in the second piece of liver from that found in the first piece, and then calculating this value as percentage of the amount found in the first piece of liver.

Restoration of Intestinal Continuity Following Artificial Anus, with Illustrative Cases

By JOHN YOUNG BROWN, M. D.
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In three comparatively recent cases, the writer has performed bilateral intestinal exclusion for the relief of artificial anus. The ease with which he was able to restore the intestinal continuity by this method, and the satisfactory results obtained, were so far superior to those he has gotten from the usual methods employed in the treatment of this condition that he has been prompted to report the cases in detail.

Case I. *Umbilical Hernia* (*strangulated*). The cecum, appendix, ascending and transverse colon were found gangrenous in the hernial sac. Artificial anus was established followed later by bilateral intestinal exclusion and restoration of intestinal continuity.

The patient was 47 years old, colored, mother of 10 children, admitted to the hospital suffering from a huge, strangulated, umbilical hernia. Duration of strangulation, 18 hours. The condition of the patient on admission was bad. On examination, a large, oval, umbilical hernia, the size of an adult head, tightly constricted at the umbilical ring, was found. The skin over the hernia was blistered from the hot applications used prior to admission. She was immediately prepared for operation after washing out stomach.

Primary operation under ether anesthesia. Transverse, elliptical incisions were made, surrounding the hernia. These were deepened to the base of the hernial protrusion, it being the intention to do a radical Mayo operation if conditions permitted.

Read before the Academy of Medicine of Cleveland, May, 1908

The surfaces of the aponeurotic structure were carefully cleared in all directions from the neck of the sac. The sac, its skin covering having been dissected back, was opened allowing five or six ounces of offensive, dark, bloody serum to gush out. It was found to contain about two inches of ileum, the appendix, the cecum, the ascending and transverse colon, all of which were found black and gangrenous, the constriction being at the umbilical ring. Without disturbing the adhesions of bowel to the peritoneum at the neck of the sac, the umbilical ring was split external to the sac. This relieved the constriction. The scissors were next run through the large and small bowel, leaving an artificial anus at the distal end of the ileum, through which gas and fecal matter in large quantities began to flow. A moist dressing was applied. The patient's stomach was again washed, and she was returned to bed in rather bad condition.

The patient slowly reacted, the gangrenous bowel gradually came away and the wound contracted, leaving fixed in the umbilical ring the distal end of the ileum, through which was discharged fecal matter, and the opening which marked the beginning of the descending colon. From this it will be seen that the descending colon, sigmoid, and rectum were completely excluded. Through a rectal tube, a through and through irrigation of rectum, sigmoid, and colon could be made, the irrigating fluid flowing freely from below upward and out through the opening in the colon at the umbilicus.

Ten weeks after the primary operation, the intestinal continuity was restored in the following manner:

Owing to the large stump of mesentery and bowel fixed in the umbilical ring, it was deemed inadvisable to attempt a direct anastomosis by liberating adhesions and resecting at the hernial site. *In addition to this, it was found that the adhesions about the opening and the contraction of the wound had practically relieved the hernia, there being left only a slight mucous protrusion of the two open ends of the bowel.* Therefore, after careful cleansing and sealing the two openings of bowel at the umbilical ring with gauze and collodion, the abdomen was opened below the umbilicus through a median incision.

The ileum was resected close up to its attachment to the ring. The portion of bowel distal to the incision was closed with a purse string suture, reinforced by a few Lembert stitches. The colon was treated in a similar manner, thus excluding a portion of both ileum and colon. An end to end anastomosis with a Murphy button was then made between ileum and sigmoid. The incision in the abdomen was then closed in layers. The patient made an easy convalescence. The descending colon, the sigmoid, and the rectum, which had been out of commission for so long, took up their work in 12 hours. The button was passed on the nineteenth day.

At the completion of the second operation, there was left the excluded portion of ileum and colon to be looked after. It was assumed that nature would avert these pouches, and that they could be removed later. The patient was, therefore, sent home, and requested to report at the end of a month. On her return, it was found that the bowel on either side had prolapsed. The bottom of either pouch was seized with a forceps, and the gut was clamped close to the ring and removed. The clamps were left to come away. The small amount of mucous membrane remaining after the removal of the clamps has since been removed almost entirely with the cautery. There now remains only a slight mucous protrusion, which gives the patient no inconvenience.

CASE II. *Inguinal Hernia (strangulated).* The patient, a laborer, 44 years old, was brought to the hospital, suffering from a large, strangulated, inguinal hernia of the right side. Duration of strangulation, 36 hours. The condition of the patient was bad. Vomiting was incessant and stercoraceous in character. After thorough stomach lavage the hernial sac was opened under ether anesthesia.

About 18 inches of gangrenous ileum was found in the sac. After relieving the constriction, which was at the internal ring, the bowel was pulled down until healthy gut was reached. A provisional rubber-guarded clamp was placed on the proximal bowel, and the gut was then cut across. A glass drainage tube, to which was attached a rubber hose, was tied in the lumen of the proximal gut, and both proximal and distal bowel were then fixed in the wound. The provisional clamp was next removed, and the gas and fecal matter were allowed to escape through the tube.

The patient made a stormy convalescence. The gangrenous bowel gradually came away, and the wound firmly contracted, leaving a double-barrelled fistula at the site of the old hernia.

Two months after the first operation, the abdomen was opened through the right rectus muscle. Bilateral exclusion was done on the two portions of bowel fixed in the wound, and the continuity of the ileum was then restored by an end to end anastomosis with a Murphy button.

The patient made a perfect recovery. The button passed on the twelfth day. With the cautery, the prolapsed mucosa has been almost entirely removed, and two small mucous openings at the site of the old wound give him little annoyance. The scar has contracted firmly, and there is no evidence of hernia, save that caused by the two small mucous fistulae. (Fig. I.)

CASE III. *Ischiorectal Abscess.* This case, while not exactly similar to those just reported, presents many points of interest. The patient, a laborer, 42 years old, was admitted to the hospital suffering from a huge, ischiorectal abscess with multiple sinuses in the ischiorectal region, communicating by three distinct openings with the rectum. The coccyx was necrotic.

He was anesthetized, the sinuses were laid bare, the sphincter being twice divided. The coccyx was resected.

Two months of careful treatment failed to heal his sinuses. It was, therefore, determined to exclude the large bowel, thus turning the fecal current, in the hope that the wound, being relieved of fecal contamination, could be healed. The following operation was done: Through a gridiron incision, the cecum was pulled up and cut across. Both distal and proximal ends were closed. The cecum was then fixed in the wound and an artificial anus made. (Fig. II.)

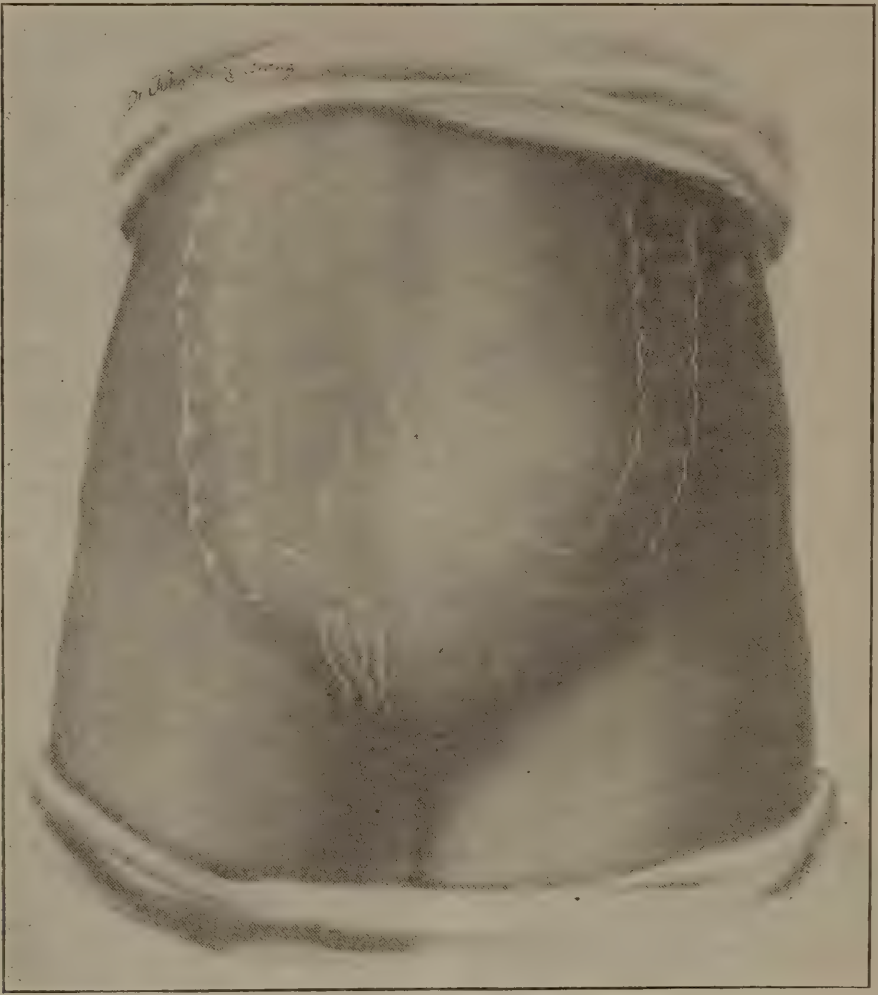

FIG. I.

At the expiration of six months, the rectal condition had entirely healed, and intestinal continuity was restored in the following manner: The abdomen was opened through the right rectus. The ileum was clamped close to the cecum and cut across. Both proximal and distal ends of the ileum were closed with a purse string suture. By this procedure, the cecum was excluded. A lateral anastomosis was next made between the ileum and ascending colon by means of a stitch after the method of Moynihan, thus putting back into commission the large bowel. (Fig. III.) The abdominal wound was closed in layers. The patient made a good recovery, and his condition today is excellent. The small mucous fistula marking the opening into the cecum gives him practically no trouble.

In the opinion of the writer, the method above described offers many advantages over those usually employed for the relief of artificial anus. These advantages may be briefly summarized as follows:

In cases in which an artificial anus has been made at the hernial site for the relief of strangulated hernia, the irritation resulting from the continuous fecal flow brings about a contraction at the wound which virtually cures the hernia. Any operation which necessitates a disturbance of this cicatrix by any attempt to restore the intestinal continuity at the hernial site should not be made. The operation of Dupuytren is a blind and unsurgical one, and the process of restoring the intestinal continuity by this method is slow and unsatisfactory. Intestinal exclusion can be accomplished without disturbing the hernial site, and the restoration of the intestinal continuity is accurate and immediate. Contrary to what is generally believed, the operation is not complicated by adhesions. In none of the cases above reported, was there any difficulty whatever in carrying out the steps of the operation.

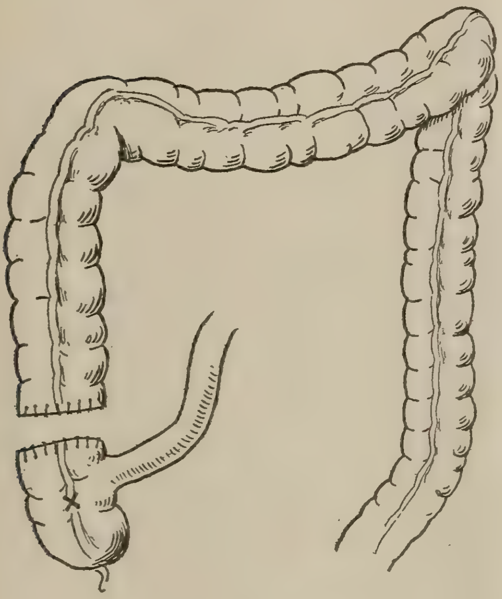

FIG. II.

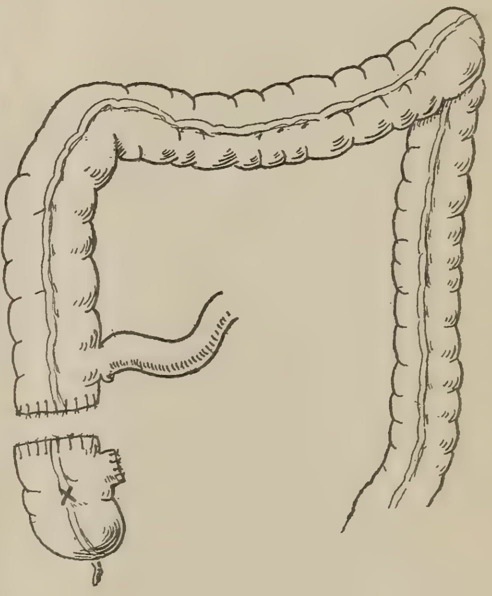

FIG. III.

Metropolitan Bldg., St. Louis, Mo.

Recent Advances in Neurology

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The science of neurology is developing so rapidly that it is scarcely possible, in the short time I wish to detain you, to do more than refer briefly to a few of the most interesting acquisitions to our knowledge.

More articles were written the past year about the ganglion cells alone than on the whole subject of neurology during any previous year.

Great hopes are built on the study of the nervous structures of fish, which is taking the place of the study of the nervous system of mammals.

The neuron controversy is still raging, centered around the anatomic question of continuity or discontinuity of substance, *i. e.*, whether there is contact or contiguity (Pflüger).[1]

Those that believe that continuity is the rule, regard the neuron theory as false, and of these we may name Nissl, Golgi, Apáthy, Haller and Schultze. While Waldeyer, Kölliker, Cajal, His, Küpffer and Retzius are all strong in support of this theory.

Bielschowsky gives the best critical review of the question and says the theory must be modified to the extent that the plasma and fibrillæ of one neuron are to be considered as connected with another by means of Held's "Nervenendfüsse."

Schiefferdecker[2] thinks the neuron theory is well established and calls attention to the remarkable observations of Tello on the diminution of the number of superfices of the fibrillæ in the nerve cells of the lizard during hibernation, and the increase in the number and fineness of the fibrillæ during the summer period of activity. The inference being that the function of the network is to expose the surface of the plasma so it may be acted upon chemically, according to the needs of the animal.

Grasset[3] and Sherrington[4] think the theory well established physiologically if not anatomically. The latter has shown that the synapse action proves that the process of transmission from neuron to neuron is not similar to simple conduction along a nerve fiber. The term synapse is used for the physiologic connection between neuron and neuron. It is probable that the con-

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President's Address to the Alumni Association of the Medical Department of Western Reserve University, June 10, 1908 ception of the synapse will be found to be a great landmark in the history of the physiology of the nervous system.

While recent histologic research strongly favors the synaptic-neuron conception, Sherrington ignores this evidence and takes his stand upon purely physiologic speculations. He says it seems likely that the connection between neuron and neuron in the reflex-arc, at least in the spinal arc of the vertebrate, involves a surface of separation between neuron and neuron, *i. e.,* between protoplasms of functionally connected cells.

This transverse membrane across the conductor must be an important element in intercellular conduction. The characters distinguishing reflex-arc conduction from nerve-trunk conduction may therefore be largely due to intercellular barriers, *i. e.,* delicate transverse membranes are present in the former.

The synaptic function is the key to the understanding of the integrative function of the nervous system. Sherrington is the first to tell us how the nervous tissue with its anatomic arrangement and its physiologic endowment, effects the integration, the functional unification or harmony of the parts of the organism. Thus making an individual of what would otherwise be an aggregation of organs. He points out that while the receptive neuron forms a private path exclusively serving impulses from one source only, the final or efferent neuron is, so to say, a public path, common to impulses arising at any of many sources of reception.

Sherrington shows that the wide prevalence of the arrangement known as the common path seems to justify us in believing that in all sensory and motor nerve fibers the conduction-process is of the same nature; for since stimulation of sense organs of widely different functions may give rise to excitations which issue conjointly along the same final common path, it is difficult to suppose that the conduction process initiated in each sense organ has its own specific nature, as Hering, Head and others have maintained.

The brain has also had its full share of consideration, for Gordon Holmes says, "The anatomy of no other organ of the body has been so minutely studied as the brain."

The cerebrum has been studied from three points of view: 1, The finer histologic structure of the cortex and its elements; 2, the formation of the layers of the cortex with reference to topographic localization of different areas; 3, the fibrillogeny or the time of appearance of the neuron fibrils in the cortex. The last research is quite new and promising, due to the use of the new silver stains.

The study of the cyto-architecture of the cortex by Campbell[5] and Brodmann[6] has caused the former to divide the cortex into seven layers and the latter into six. These investigators by a study of the cell structure of the cortex, and Vogt[6] by his physiologic method of localization, have demonstrated that there is an abrupt change in the type of the cortex in man, the anthropoid apes, and lower monkeys at or near the fissure of Rolando; and evidence shows that there is here also a sudden difference of physiologic function.

Grünbaum and Sherrington[7] from a study of the brains of various anthropoids by a method of unipolar faradisation with minimal stimuli came to the conclusion that the motor area lies wholly in front of the fissure of Rolando and never ascends into the ascending parietal convolution. Jolly and Simpson[8] by a different method arrived at the same conclusion.

Campbell[5] has shown changes in the cortex in the precentral convolutions in cases of amyotrophic lateral sclerosis and when a limb has been lost and also in the post-Rolandic area in cases of tabes. Therefore it is now generally accepted that the fibers of the pyramidal system arise only from the precentral gyrus.

Maxwell[9] believes that the grey matter of the cortex is not irritable to chemical, electric and osmotic stimulation and that the cortex is devoid of irritability to all kinds of stimulation and that the response sometimes obtained is due to spreading into the irritable white substance.

Cushing[10] and others have shown that the dura, cortex, and subcortical area are not sensitive to dissection manipulation.

Much light has of late years been thrown on the difficult subject of the nature of afferent impulses by the epoch-making work of Head,[11] Campbell, Rivers, Sherren and Thompson.

These investigators have added an entirely new chapter to the science of neurology inasmuch as they have shown that common sensation is based upon three kinds of sensibility which may be demonstrated in the peripheral nervous system. These are first: Deep sensibility, capable of answering to pressure and even capable of producing pain. These fibers run mainly with the motor nerves and so are not destroyed by division of all the sensory nerves of the skin. Secondly we have the protropathic sensibility, capable of responding to painful cutaneous stimuli and the extremes of heat and cold. This belongs to the great reflex system, producing a widely diffuse response unaccompanied by any definite appreciation of location of stimulus. Thirdly, the epicritic sensibility, by which we gain the power of cutaneous localization of appreciation of light touch, of discrimination of two points (compass test) and of the finer grades of temperature change.

Head and Thompson[11] have further shown that the spinal cord is the seat of transmutation of most of the impulses of the peripheral into those of the secondary level of the afferent nervous system.

The genesis and regeneration of the peripheral nerves seems to be one of the most interesting questions of the past year's work, greatly helped by the development of numerous good staining methods. On the one hand we have the theory of v. Bar, Hensen and Gegenbaur that there is from the first a continuous plasma connection between the ganglion cell and the nerve end-organ and this later through differentiation becomes a nerve.

On the other hand we have the theory of His, Waldeyer and Cajal that there is a primitive separation of the ganglion cell from the end-organ and later a union through the outgrowth of the axiscylinder that seeks the end-organ through a chemotaxis and connects with it by mere contact, thus forming a nerve.

The question of whether the neurofibril, or the perifibril substance covering it, is the active conductor of nerve influence is still in doubt. Bethe and Dogiel believe the fibril alone plays the role of conduction, while Cajal, Bielschowsky and Kolmer believe that they both equally act as conductors. Rebizzi believes that both carry the nutritive influence of the cell.

It is probable that the nerve impulse consists of a chemico-physical change between plasma and fibril. MacDonald and Sherrington[7] urge that the speed of propagation, its brevity of time-relations, its freedom from perceptible temperature change, its facile excitation by mechanical means, its facilitation by cold, etc., are all against nervous conduction being preeminently a chemical rather than a physical process.

In this connection it is interesting to consider the "psycho-physical galvanic reflex" of Muller[12] in which we find, on putting a test person in a circuit with a galvanometer and one dry cell, that there is a fluctuation of the galvanometer with sensory, psychic and emotional stimuli.

Taking up next the study of the peripheral nerves, their injury, degenerative and reparative processes, we find much of interest.

It is only during the last three years that the importance of pressure of cervical ribs on the brachial plexus has been recognized.

Taylor[15] and others have lately obtained brilliant results by suturing the torn nerve roots in cases of brachial birth palsy of the Erb type, being successful in 20% of cases. The facio-accessory anastomosis for facial paralysis is giving us encouraging results.

Our knowledge of neuritis has been increased by numerous contributions. Déjerine[17] has called attention to "progressive hypertrophic interstitial neuritis." Changes in the ganglion cells in the neuritis of infections and lead poisoning producing amyotrophy have been described by Buzzard[14] and Wilson[18]. Déjerine and Thomson have shown lesions in the spinal cord subsequent to herpes zoster.

Trifacial neuralgia in its worst form is no longer to be dreaded as before, for we are now able to promise a cure, either by Schlosser's injection treatment, resection of nerve, or the Hartley-Krause operation of removal of the Gasserian ganglion. Cushing has had no deaths in his last 40 cases of removal of the Gasserian ganglion and considers it not an especially dangerous operation; and Mills says it is always certain to cure.

Orr and Rows[13] have shown that in the peripheral and cranial nerves and spinal roots there is a constant stream of lymph ascending towards the central nervous system whose main current lies in the inner meshes or lymph spaces of the fibrous perineural sheath. Toxins, such as that of tetanus, rabies, etc., reach the spinal cord and brain by this channel. Buzzard[14] has lately illuminated the subject of the source of infection of the nervous system and the paths of infection.

Wallerian degeneration and regeneration is no longer believed in by many. Marinesco[22] believes that in Wallerian degeneration both the axolysis and myelin changes are the result of a species of digestion by means of ferments secreted by the nuclei of Schwann's sheath.

Cajal, Bethe and many others favor regeneration from the central end and the former believes that there is a chemotactic action of the Schwann's cells for the central end, which causes it to find the distal end in spite of great obstacles.

The peripheral theory of regeneration was started by Büngner in 1891, and is supported by Kohn, van Gehuchten, Schultze and others who believe there is an autoregeneration of peripheral nerves through the activity of the cells of Schwann's sheath, which take on the function of neuroblasts.

Shiefferdecker[2] thinks, contrary to many other recent writers, that the neurofibril may regenerate by the fibril being re-formed from the plasma cell, so long as the nucleus retains or can regain its definite function—a fact of the utmost importance in neurology.

Van Gehuchten, von Monakow and Marinesco believe that as a rule when wholly central fibers are interrupted their cells of origin do not, like those of the peripheral neurons, pass from the stage of reactionary chromatolysis into that of reparation, but slowly disappear, so that the destruction of the neuron is irreparable and permanent.

Our interest in aphasia has been revived by Marie's[23] startling contribution to the subject. He does not believe that motor aphasia is dependent on a lesion in Broca's area and says this region plays no special part in the function of language. He thinks the aphasia of Broca is due to a lesion in the zone of Wernicke, or in the fibers coming from it, associated with a lesion in or near the lenticular nucleus. He lays stress also on every aphasic having obtunded intelligence after a stroke. Déjerine[24] and numerous others have challenged this conception of aphasia with many arguments.

The diagnosis and treatment of tumors of the brain have occupied much attention of late. Granger Stewart[25] gives us an early sign of value in the diagnosis of tumor of the frontal lobe, namely, the loss of the abdominal reflex on the side opposite the tumor and the presence of a fine rapid vibrating tremor in the limbs of the same side as the tumor.

Oppenheim[26] believes that a valuable sign between tumors *on* or *in* the pons is the condition of the optic nerve and says that when *in* the pons there is usually no choked disc, unless the growth involves the fourth ventricle and produces a hydrocephalus. He further states that staggering toward one side is of little value in determining the seat of cerebellar lesion, but believes that unilateral loss of the corneal reflex is a very valuable and early sign of cerebellar tumor.

Cushing[27] has described menstrual disturbances occurring with brain tumor occurring near the hypophysis and Frölich has shown an analogous condition in males who showed sexual infantilism. Schoffer[28] removed an adenoma from the pituitary body, and the hair, which had fallen out everywhere before the operation, now began to grow. This case illustrated well the progress made in brain surgery.

Frazier has removed one-third of the cerebellar hemisphere in order to expose a cerebellopontile-angle tumor and the patient recovered with but slight subjective unsteadiness of gait. More than 35% of brain tumors are now open to surgical treatment and when we cannot locate or remove the growth we should always do an osteoplastic operation to save the eyesight[20] (by preventing or relieving a choked disc), to relieve the headache, vomiting and stupor. Then too occasionally, as in cases reported by Horsley and Cushing, the growth may undergo retrograde changes and disappear.

Russel, Cushing and Starr advise early operation even when the tumor is thought to be a gumma, for the eyesight may be destroyed before antisyphilitic treatment may be effective.

Kocher and Cushing have made good use of the blood-pressure changes in estimating the intracranial tension and condition before, during, and after operations within the skull.

The finger and the sphygmomanometer may show the characteristic rhythmicity of pulse rate, blood-pressure and respiration, which occurs when the intracranial pressure is approaching Kocher's third stage of compression (Höhestadium des Hirndruckes).

A slowing of the pulse and a rise of blood-tension after even a dry osteoplastic operation should lead to an examination of the flap to see if there is bulging from intracranial tension, due to secondary edema or hemorrhage. The examination of the eyeground for edema of the nerve-head should also be made at this time. Head, Kocher[32] and Sherrington have called attention to zones and areas of hyperalgesia and hyperesthesia of inestimable value in diagnosing injury of the brain.

The subtemporal decompression operation should be done in cases of cranial injury in which we may have a "bursting fracture" of the skull or in which there is likely to be hemorrhage or edema in the temporal region (Cushing).[19, 31]

This operation is also helpful or even life-saving in cases of thrombosis or embolism of cerebral vessels to relieve the secondary edema. Cushing[19] has decompressed five of these cases, three in the terminal stage, and all have recovered. He has also resorted to the operation with success in edema of the brain due to acute serous meningitis and nephritis when lumbar puncture had failed to give relief.

Starr[29] says in a case of apoplexy in which the blood-pressure rises steadily to 250 mm. of mercury and in which coincidentally with this there is a slow pulse, falling to 50 a minute, it may be said that the case will be fatal unless pressure is relieved by a considerable opening in the skull without regard to the finding or the removal of clot. He advises opening over the motor area on the side opposite the paralysis as the clot may be located there.

Cushing[19] has had 10 operations for intracranial hemorrhage in the new-born, four of the patients remaining alive and well, thus, perhaps, avoiding idiocy, paralysis or epilepsy.

As the work of Krause and Borchardt[30] have shown, owing to a more accurate localization on the part of neurologists and a better understanding of shock and its prevention, we are now able to attack lesions of the posterior cranial fossa with success in about 40% of cases, that would otherwise all be fatal. Krause[30] taps the fourth ventricle in cases of hydrocephalus of this chamber.

Meningitis has been greatly illuminated since 1901 by the light thrown on the subject by lumbar puncture, and with this increase of our knowledge meningism and meningismus have lost ground and their places largely taken by Quincke's serous meningitis (Riebold).[33]

Epidemic cerebrospinal meningitis has received thorough study and much may be hoped for by its treatment with the Flexner-Jobling and Kolle-Wassermann serum. Meningitis is, thanks to lumbar puncture, seen to occur and be recovered from in cases of influenza,[35] pneumonia, mumps and many other diseases, so that we no longer look on the disease as being so uniformly fatal.

Ballance[34] considers that operative interference by bilateral osteoplastic openings is justified in general suppurative meningitis, though it would seem that the metameningitis crippling of the brain that is so likely to ensue would leave a mental or physical cripple.

Crowe[36] of Johns Hopkins has made the important discovery that formaldehyde is present in the cerebrospinal fluid after the administration of urotropin. This discovery may be helpful in treating meningitis or preventing infection of the cerebrospinal meninges during operation.

Lumbar puncture deserves a few remarks as it is one of the most valuable acquisitions to our diagnostic methods. It has only been in general use by neurologists since 1901. We now examine the fluid thus obtained as to the cytocount, pressure, bacteria, blood, proteid and sugar contents.

Laruelle[37] using the counting method of Fuchs and Rosenthal, in preference to Widal's, lays down the rule that, "there is a pathologic reaction present when the cell count, repeated two or three times on fresh fluid, gives an average of more than five leukocytic elements per cubic millimeter."

Babinski treats aural vertigo by lumbar puncture and says it diminishes the pressure in the labyrinth.

Lumbar puncture often allows us to positively diagnose a subdural hemorrhage. This procedure has, according to Buzzard[14] and Wichman, shown an increased pressure, a lymphyocytosis and leukocytosis together with microorganisms, in cases of anterior poliomyelitis, neuritis, Landry's paralysis and myelitis.

Lumbar puncture is now a great aid in the field of psychiatry. Wassermann, Neisser and Plaut[39] by the examination of the blood-serum or cerebrospinal fluid have found in syphilitic diseases a specific serodiagnostic reaction and specific antibodies may be demonstrated which are conclusive as to the syphilitic nature of the case. The almost constant presence of such antibodies in tabes and general paralysis is strong confirmatory evidence of the syphilitic origin of these two diseases.

In the absence of meningitis a cytocount of 12 to 200 lymphocytes to the cubic millimeter, and especially with the presence of plasma cells, points to either cerebral lues, tabes, or general paralysis, in contradistinction to an arteriosclerotic psychosis, an alcoholic psychosis or a functional brain disorder.

Neurology has been helped greatly by other new diagnostic aids, especially by the recently discovered reflexes of Babinski, Kernig (sign, rather than reflex), Oppenheim, Gordon-Shaffer, Hirschberg-Rose and the periosteal or bone reflexes. Sherrington[4] has shown the knee-jerk to be a true reflex.

The presence or absence of the tuning fork vibration sensation is often helpful. Brain puncture in the hands of Kocher and others has been valuable.

William Furnrohr has called attention to the value of the X-ray in neurology as it may aid us in diagnosing tumors of the brain and growths in neighboring structures to the spinal cord.

It also seems to have a curative action in syringomyelia (Raymond).[40]

Waterman[41] has pointed out the value of the tonometer in cases of traumatic neuroses.

Sergent's[42] "white line" seen with disease of the suprarenals seems to be of some value in tuberculous meningitis and neurasthenia.

Hieger[43] and others have shown that the height of the lesion in tumor and other transverse lesions of the cord may be determined by the limit of the line of sweating. Sweating does not occur below the point of paralysis.

Our knowledge of hemiplegia has been increased by Babinski's discovery that there is paralysis of the platysma in the organic, but not in the functional paralysis. Grasset[44] has shown that in organic hemiplegia while the patient may raise either lower limb separately (the paralysed one feebler) from the bed, while in the supine position, it is impossible for him to raise them simultaneously.

Kolisko has pointed out the occurrence of softening of the lenticular nucleus, seen in gas poisoning, due to thrombosis occurring in what he calls "the artery of cerebral thrombosis." We may then have the "syndrome of the corpus striatum" and get with a hemiplegia, trophic disturbances of skin (gangrene) and lungs, psychic changes affecting memory and emotions (Dana).[45]

We now know that word-blindness is due to a lesion in the angular gyrus and that hemichorea and hemiathetosis, which are seen after lesions of the thalamus, are probably the result of lesions of the superior cerebellar peduncles.

Exophthalmic goiter is no longer so resistant to treatment for Beebe's antithyroid serum is very promising and Kocher's operations have shown 83% of cures in his hands.

Tabes may now be more certainly diagnosed early by the presence of lymphocytosis in the cerebrospinal fluid; while the injection of cocain into the subarachnoid space enables us to relieve the lightning pains and the gastric crises.

Acute encephalitis is now distinguished from meningitis clinically, thanks largely to the work of Strümpell, Wernicke and Oppenheim.

MacCullum has pointed out the wonderful curability of the calcium salts in tetany following parathyroidectomy and we may find this treatment useful in other forms of tetany.

Oppenheim in 1900 first described a curious condition known as myatonia congenita in which there may be degenerative changes in the muscle (Spiller) and a pre-Wallerian degeneration of the nerves (Bernhardt).[47]

In the field of psychiatry we also find considerable that is new, notably the condition known as lacunar disease, in which we have lacunæ with disintegration or formation of small cavities chiefly in the lenticular and caudate nuclei.

Mental diseases have been simplified by the new and useful classification of Kraepelin, based upon the course and termination rather than according to the symptomatology. From this point of view the great bulk of acute psychoses can be brought under two divisions—those that pass into deterioration and those that end in recovery. Each of these present from the beginning characteristic symptoms.

As Dreyfus[49] has lately reported, we must now consider involutional melancholia as a phase of the manic-depressive type with a correspondingly better prognosis.

Gowers in his lectures "Borderland of Epilepsy" has called our attention to the difficulty in differentiating between hysteria, epilepsy, narcolepsy (Gélineau), psyasthenic (Spiller)[50] and vagal attacks. Stokes-Addams disease may stimulate any of the above attacks of unconsciousness.

In the treatment of epilepsy we have Krause's recommendation to excise the cortex in Jacksonian epilepsy after determining the area by electric stimulus. Kocher believes that epileptic attacks are produced by a local or a general increase in intracranial pressure and shows that some are helped by a decompression operation. The Toulouse-Richet treatment is of great help and the work of Landenheimer and J. Hoppe explains how bromid acts.

Bier's hyperemia method is advocated by some to relieve epilepsy, paresis, melancholia, dementia precox and paranoia.

The "psychophysical galvanic reflex" test is on trial and may throw light on the various psychoses.

A lumbar puncture and the cytologic findings enables us to quickly and certainly diagnose cerebrospinal lues, tabes and general paralysis from similar conditions.

Hysteria has been much discussed of late due to the writings of Janet, Freud and Babinski. Janet[55] in his instructive book says: "Hysteria is a form of mental depression characterized by retraction of the field of personal consciousness and a tendency to the dissociation and emancipation of the systems of ideas and functions that constitute personality."

Babinski's[53] view is that there are no permanent stigmata and that most symptoms, such as the hemianesthesia, visual field changes, etc., are due to a faulty examination that suggested these symptoms to the patient.

Freud's[53] startling view that some delusional states, especially hysteria, are really psychoses of defence that arise in an endeavor to banish memories, and that in them the symptoms are determined by the content of the banished material which is usually of a sexual nature.

In one individual with an hysterical constitution such mental dissociation results in hysteria, while in another it results in dementia precox. This last condition has been studed by Jung[54] by his dream-analysis method, and he says: "If we allow a person in a dream to act and walk around as if he were awake then we have a clinical picture of dementia precox, as in this condition a preformed mechanism is loosened which normally and regularly functionates only in a dream."

In most of the forms of neuroses and psychoses we get our best results in treatment from psychotherapy as advocated and elaborated by Dubois, together with isolation.

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Carcinoma in High Life

By H. E. HANDERSON, M. D.

Anne of Austria, the Spanish girl-wife of the boy-king Louis XIII, of France, young, fair and weak, if not frail, is probably better known to us in the romantic pages of Dumas than in the more formal records of professed historians. Novelists have, indeed, vied with each other in painting the youthful charms, which fired not only the inflammable passions of the handsome, sensual and flighty George Villiers, Duke of Buckingham, but turned even the cool and crafty brain of so eminent a statesman as Richelieu. Married, at the age of thirteen, to a king of fifteen years, introduced into the society of the most polished, elegant, frivolous and immoral court of Europe, and placed under the tutelage of Madame de Chevreuse, one of the wittiest, most beautiful and most unscrupulous intrigantes of an intriguing age, we cannot wonder that the "Little Queen" fell, perhaps innocently, into the numerous nets spread for her thoughtless and unwary feet. With the early butterfly life of this vivacious and beautiful queen, the contrast of her declining years is striking and painful. I do not think it is generally known that Anne of Austria died of mammary cancer, after two years of suffering, in the year 1666. Many of the details of her sickness, her treatment and her death are furnished us by that garrulous, but witty, medical reporter of the seventeenth century, Dr Guy Patin, whose letters afford an inexhaustible fund of information relative to the medical affairs of his own day. So far as possible, I shall present the sad story in Patin's own words.

Under date of November 14, 1664, he gives us the first muttering of the impending storm.

> "The queen-mother was bled from the foot a few days ago. Without other sickness, she has passed the age of sixty-two; *subest tamen aliqua causa physica, quae siletur et sileri debet.*"

After his usual custom, Patin lapses into Latin, either to conceal his meaning from the uninitiated, or, perhaps, because this was the style of elegant writing in his day. Four days later, however, the secret is out and he writes:

> "Everybody here (in Paris) is talking of a cancer of the breast, which has developed in the queen-mother, and it was for this that she was bled a few days ago."

On November 21 Patin is still more outspoken:

> "Nothing is said of the queen-mother except in secret: the courtiers do not dare to tell what they see, and yet it is certain that she has a cancer of the left breast, a disease, as you know, incurable. Don't imagine, however, that they will pay no attention to the charlatans, who will always promise to cure her. Well, the burden of the song and the comedy of life is certainly bad, particularly for a woman who has always lived high and almost never been sick, and who accordingly has never taken any precautionary remedies, by the use of which she would find herself in better condition today. Here we are having lots of processions and public prayers, which in my judgment will do her no harm; but I wish I felt assured they would be of use and cure her. Still, the prayers of the righteous avail much, and I do not agree at all with the poet who says too rashly, *"Desine fata deûm flecti sperare precando."*

Patin's judgment of the character of the queen-mother is expressed in the following passage of another letter:

> "The queen-mother is a very excellent woman, full of the best intentions; but she lacks influence to render them effective."

On December 16 of the same year, resorting again to Latin (which I translate), he writes:

> "The queen-mother is faring badly with her mammary cancer. They have held a private consultation of the court-physicians with four famous surgeons, as the result of which it is decided that the disease is incurable, and that the only hope is in a system of mitigation, that is in remedies somewhat anodyne and emollient. This, in a disease of such gravity, is but a broken reed (*ficulneum auxilium*) to rely upon."

Of the personnel of this weighty consultation we have some information. Two of the court physicians were Claude Séguin and Antoine Vallot, the former professor of medicine in the Collége de France and first physician of the queen-mother, the latter ordinary physician to king Louis XIV. Vallot had been physician to the queen-mother until 1652, when, on the death of Vautier, he was promoted to the position of royal physician. An advocate of the use of antimony, cinchona and opium, he was, to Patin and other defenders of medical orthodoxy, the incarnation of Paracelsian heresies. The leading spirit on the surgical side was Jean Bienaise, a reputable, though not famous, surgeon of St. Côme, whose intelligent frankness upon this occasion won him the permanent confidence of king Louis.

The decision of the consultation produced its natural result. The despair of the Faculty was the opportunity of the charlatan. Accordingly, on December 23, 1664, we read:

> "Some pretend that the queen's tumor of the left breast is not dangerous. I wish they may be true prophets, but I do not believe it. They have called in a priest from the vicinity of Orleans, who promises miracles

with his secrets and his plasters. God alone, however, performs these great miracles, and even then they occur but rarely. The whole world, great and small, is subject to the laws of nature. No one longer pays any attention to the Rabbins of the court. Their secrets are stale, their deeds mere cabal and imposture."

This priest seems to have been a M. Gendron, vicar of Vauvre, between Chartres and Orléans. By the Rabbins of the court I understand Patin to mean the court physicians, against whom he always bears an active enmity. In a letter bearing date February 13, 1665, we again read:

"The queen-mother is losing flesh, a symptom threatening and of bad prognosis. I should be very sorry to have her die, for she is a woman of good intentions, who has, indeed, permitted evil in her life, but did not cause it to be done. Mazarin abused rudely her complaisance. I pray God she may yet live a long time."

In a postscript he adds:

"They say that the queen-mother suffers from sharp pains and that the cancer is widely open and discharges pus abundantly. They have called in a physician of Bar-le-duc, named Aliot, a great charlatan and a disciple of Van Helmont, *qualis pater, talis filius.*"

This Pierre Alliot and his son, Jean Baptiste, with other members of the family, exploited for many years a secret cancer-cure, said to have been composed of arsenic and lead. In another letter of April 28, 1665, we read:

"The queen-mother has bad nights, but nevertheless she is going with the king to St. Germain. They say also that her sufferings are increasing, and are more severe than usual. . . . . They do not think much at the court of this M. Gendron, vicar of Vauvre, between Chartres and Orléans. For the ulcerated breast of the queen-mother they have taken a so-called physician of Bar-le-duc, named Alliot, who has promised and given hopes of some amendment, and meanwhile has had an advance payment of 2,000 crowns. If an apostle had performed a miracle, they would not pay him so much, nor so soon, but what can you expect? Do you not remember the great proverb of the good doctor of Rotterdam, the amiable Erastus, drawn from Seneca *in Apocolocyntosi,* where, speaking of the Emperor Claudius, he says *aut fatuum aut regem nasci oportet?* So in our profession, one must be a good man in danger of pining away his whole life, or a charlatan, deceiver, impostor and false prophet, like our Nostradamus. The poet of Provence is, indeed, dead, but he has left numerous successors. We have in the world so many charlatans, that one may say of them what Pliny of old, in his natural history, said of certain hermits in the deserts of Palestine, *gens aeterna, in qua nemo nascitur.* This corresponds very well with our numerous convents of monks; for, though no women cohabit with them, nevertheless the race never runs out, *uno avulso, non deficit alter.*"

Nostradamus, the well-known astrologer, was an alumnus of the famous university of Montpellier, and illustrates the fact that even a medical degree may not prevent a man from being a charlatan. About a month later Patin writes:

"There is talk here of a great consultation to be held at St. Germain for the queen-mother, to decide whether the breast should be opened to withdraw the pus and malignant serosity which consumes her substance day by day. They speak also of a certain physician named Chatelain, whom M. de Bezons, Minister of Justice, has sent here from Frontignan, and who, they pretend, heals these kinds of maladies and has wonderful secret remedies against the incurable diseases. If he did not promise something, they would not make him come from such a distance. He is an impostor. The cancer is not healing at all, and will not heal. But the world wishes to be deceived. *Beatus vir qui intelligit etc.*"

The variety of the rumors current as to the precise condition of the unfortunate patient is well illustrated in the next letter, bearing date June 9, 1665:

"The queen-mother has been worse for the last three days. Erysipelas has appeared in both breasts, accompanied with great pain and bad nights. For this reason she has been bled from the arm and foot. I fear gangrene will set in speedily and open to her the door of heaven for eternity. They say today she is still worse and has received extreme unction. This news smells of the grave."

Later he adds:

"There has just dropped in a gentleman from St. Germain, who reports that the queen-mother is decidedly better than she has been for ten days; that is to say, not so low, I think he must be understood. But, whatever they say, she is advanced in years, her strength is failing little by little, her breast is ulcerated and discharging pus and malignant fluids, she will enter into her sixty-fifth year next September, *vitae summa brevis spem nos vetat inchoare longam,* and, as the same poet has said,

Pallida mors aequo pulsat pede pauperum tabernas,
Regumque turres.

They talk of bringing her back from St. Germain to the Bois de Vincennes. Wherever they take her, the good princess bears her trouble with faith, and I am very fearful for her."

In a letter of August 4, 1665, we again read:

"The queen-mother is a little better since the opening of her abscess, from which was extracted considerable foul matter. The abscess is, however, in the right breast, not the left, which is ulcerated by the cancer. She has been made more comfortable by taking a purgative. Inasmuch as she has always been a large eater, I fancy there was no lack of material for the action of the purgative. I pray God she may get well and reduce the taxes and duties left us by Cardinal Mazarin, before she dies. I will consider a saint anyone who will perform this good service for France, who needs it badly."

Two weeks later, however, we read:

"They say that the queen-mother is much worse, that she has made her will and the king has signed it, and that numerous painful glands are developing around her breasts. *Scrophulae sunt Hispanae genti familiares, ex quibus olim circa annum* 1612 *obiisse dicitur ejus mater Regina Hispaniae.* The diseases of such princes seem to me very remarkable. Philip II, her grandfather, died of the morbus pedicularis, as President de Thou tells us in his history of the year 1598. Herod died of the same disease, and was accordingly named in the Acts of the Apostles σκωληκόβρωτος, i. e. *a vermibus erosus et jugulatus, phthiriasi consumptus.* Dominicus Baudins has told us that this is a disease of tyrants, and it is at least an evidence of horrible corruption of the humors. As the first cause does not suit the queen-mother, who has always been too kind, we may say that she is dying of the second, for she has eaten too much and purged herself too little. These are the two causes of her severe disease, and, as the result of them, they say at court she will soon die. Her face is already very pinched. As Vallot was speaking against Gendron, M. le Duc D'Orléans flew into a passion and spoke rudely to this Archiater, *eique dixit verba praetextata.* Even the king displayed evidences of dissatisfaction. The queen-mother has a new tumor on her left shoulder, the side of the cancer. . . . Today the Rabbins of the court have held a consultation to consider the offers of a peasant to cure the queen. However, they refused them, and a monk, who presented himself, was likewise rejected. . . . . I have just talked with the curé of St. Germain, who saw the queen this morning and says she is not so ill as those say who have not seen her. *Faxit.*"

Under date of September 4, 1665, Patin tells us:

> "The story goes that the queen-mother is better, but I doubt it: for she coughed so much the day before yesterday that the Rabbins (I thought of saying Robins, but they are not in any sense sheep, *nisi sunt verveces deaurati*) were compelled to give her opium, by which she was so badly affected, that they say she swore she would never take it again."

The poor pun upon Rabbins and Robins (shysters) and *verveces deaurati* (gilded mutton-heads) is not extremely refined, though it is decidedly characteristic. Opium is of course ostracised by Patin, as one of the heresies of Paracelsus.

A week later we read:

> "At last the court physicians have driven the priest Gendron from the queen-mother, and have introduced M. Alliot, a physician of Bar-le-duc. The courtiers say she is improving every day, and I pray God that she may recover."

But our hopes are again dashed at the close of the letter by the story that

> "The queen-mother is dissatisfied at the dismissal of Gendron and will neither see Alliot nor let him touch her. Bertrand, her surgeon, dresses her ulcer, under the direction, however, of Alliot. *Mundus omnis facit histrionam."*

By the thirteenth of November the situation had become still more strained, and we recognize a condition of affairs quite familiar in desperate cases:

> "I have just returned from a consultation with a physician, who tells me he knows from good authority that the queen-mother is much worse, that M. Alliot is a brazen-faced charlatan, very ignorant and very impudent. M. Séguin has preserved scarcely any reputation, and Valot and Guénant little more. Princes are very unfortunate to fall into such bad hands."

The end of the tragedy is fast approaching. On January 8, 1666, Patin writes:

> "The queen-mother is much worse and is extremely emaciated. Fat as she was, she is now a mere skeleton. Much dissatisfaction is expressed with M. Alliot, and they even say that he is doing nothing further. To alleviate her sufferings no better remedy has been found than the little pills of these gentlemen Archiatri, which, as the Secretists tell us, consist of opium and May roses."

The poor sufferer, whose tortures were aggravated by a fastidiousness of smell and touch, even beyond the habit of women and queens, bade a final adieu to the world and its pleasures on the evening of January 20, 1666, and her decease is announced by Patin with a heartless *sang froid,* which we may at least hope was partly assumed, in order to maintain his character as a man of the world and a philosopher, to whom kings and queens were mere idle puppets upon the stage of human action.

It is easy to see how little human nature has changed in the course of the two and a half centuries elapsed since the tragedy above recorded, nor is it flattering to our vanity to reflect that similar follies might (probably, indeed, would) be perpetrated on a similar occasion in the full light of this boasted twentieth century.

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EDITORIAL

Saint Luke's Hospital

The members of the medical profession and citizens of Cleveland will be interested to know about the new St. Luke's Hospital, which opened its doors to patients July 18, 1908. This beautiful hospital is located at 6606-14 Carnegie Ave. S. E. Although it is a Methodist institution, the readers of this JOURNAL will of course understand that the affiliation of a hospital with any church means only that the church proposes to stand by it and support it in its philanthropic work. One-third of the Board of Trustees is composed of men not connected with the Methodist church, but men who are known for philanthropy in deed as well as in thought. It is one of the requirements of the constitution of the hospital to have non-Methodists of such character on the Board of Trustees constantly.

The hospital is most modern and complete in its construction and furnishing. It is a fire proof building, three stories high and composed of three divisions or parts. In the central part are found the offices, waiting rooms, apartments for resident physicians, and the superintendent of the training school, and on the third floor of this part are two spacious surgical operating rooms, well equipped, conveniently arranged and well lighted. To the right and left of the main entrance are two wings composed entirely of private rooms and wards. The central portion and lateral wings of the hospital are connected by large and beautiful corridors. The capacity of the hospital is nearly 100 patients. The rooms are all amply large, well ventilated, beautifully furnished and decorated. There are only three small wards each containing eight or ten beds. There is a flat roof on the central portion of the hospital to be used as a sun parlor or for open air treatment, for chronic or convalescent patients.

The ventilating system of the hospital is unique and found in no other hospital in Cleveland. The air supply for the entire building is drawn into a room 9 x 14 feet where it passes through atomized water sprayed at the rate of 70 gallons per minute. After being washed, and in summer cooled, it is dried by being forced through 100,000 square feet of copper baffle plates which collect the free water and remove from 80 to 90 per cent. of the soot and dust which is found in the air as it enters the building. The air is forced into each room by a fan through double conduits, one side of which carries hot air and the other side cold. By means of this arrangement air of any temperature can be secured. The impure air is withdrawn through separate flues that enter the attic.

The plumbing, diet kitchen, elevator, refrigerators, and other conveniences of the hospital are hard to equal. The great amount of tiling, rounded corners in rooms and corridors prevents the accumulation of dust and dirt and speak well for the sanitary features of the hospital.

The new hospital is more or less the outgrowth of the former Cleveland General Hospital located on Woodland Ave. The Cleveland General (now closed) with some funds on hand for hospital use a few years ago, and with $30,000 donation from the estate of the late Dr Guy B. Case, a former member of that staff, was about to erect a new hospital, and had selected the location upon which stands the hospital bearing the name St. Luke's. However, before the building was begun, the funds on hand by the staff of the General Hospital were placed in the hands of the Board of Trustees, composed and organized as just stated. The newly organized Board or Hospital Association has greatly amplified the plans of the hospital and erected a more complete building than was formerly planned by the Cleveland General. They have retained the personnel of the visiting staff of physicians and surgeons as well as the nurses and training school of the former Cleveland General Hospital.

The Rev. Ward Beecher Pickard, D. D., former pastor of the Epworth Memorial Methodist Church of this city, was unanimously elected superintendent. The reputation which Dr Pickard has acquired in this city as a minister, an able financier, and social worker needs no comment, but is an assurance of proper and impartial management of the new institution. A separate dormitory for nurses is located on the hospital grounds. While the hospital has a capacity for 100 patients, it can easily accommodate more by placing two beds in a room when so desired. All the rooms are large and can be used as double rooms at any time.

As in other first class hospitals the ward service is entirely under the supervision of the hospital staff. Private rooms are open alike to the hospital staff and any outside reputable physician or patient.

We quote from an editorial of the *Cleveland Leader*, July 17, 1908:

"Although the institution is under the especial care and patronage of one great denomination—the Methodist Episcopal Church—its value to Cleveland is, of course, bounded by no sectarian lines. The new hospital will do its duty, and that means the fullest possible employment of its resources in the amelioration of suffering and the saving of life."

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Neuralgia: In the *New York Medical Journal* for June 13, S. Ormond Goldan treats of the subcutaneous injection of chloroform in the different varieties of neuralgia. While the method is exceedingly easy of application, all patients will not submit to it. The method produces certain reactions, such as redness, swelling, etc., which seem alarming to some. In acute neuralgia, in cases in which the cause is easily determined, general medical treatment will usually prove effective. In cases, however, in which all other palliative methods have been unsuccessful, the patient will be willing to submit to almost any treatment which will relieve him of his sufferings. In these cases the treatment with chloroform will prove almost always successful, in fact magical. It is for this reason he terms the treatment specific. The technic consists in injecting pure chloroform in quantity varying from two to 10 minims, into the site of the neuralgic area with an ordinary sterilized hypodermic syringe under aseptic precautions. In facial neuralgia, he treated seven cases with chloroform, three affections of the supraorbital nerve, one of the infraorbital branch, and three of the infraorbital and maxillary branches combined. The treatment resulted instantly in almost absolute cessation of pain. The procedure in all of these cases was to inject two to five drops in five or six sites about one-half to one inch apart in the painful area. In lumbago he has had patients come to the office almost creeping, to leave within a half hour perfectly free from pain and perfectly erect, and these had no recurrence of lumbago. He explains the effects by the inflammation which is produced determining a new supply of blood to the nerve filaments through the formation of new capillaries. He concludes that the nearest approach to a specific in neuralgia is, in his opinion, chloroform. The method in his hands has proved to be devoid of any untoward effects, either immediate or remote. Chloroform injected locally has no systemic effects; it has a local anesthetic effect, which is desirable. Superficial injections often act with certainty even when the pain seems to be deep seated.

Antitoxin: In the *Medical Record* for June 6, Alex. W. Blain, Jr., calls attention to urticaria following the second administration of diphtheria antitoxin. He believes that its occurrence in 20% of all those receiving the antitoxin would be a conservative estimate. His conclusions are that the second immunizing dose of antitoxin should be given with caution, especially to individuals of the blond type, and regardless of how long previously the first was administered. Should an individual, who has at some time previously received antitoxin, become exposed to diphtheria, it is better in his opinion if facilities are such that the exposed person can be kept under observation, to delay the further administration of antitoxin until symptoms of diphtheria appear. Diphtheria taken early and properly treated, would be accompanied by as little danger and by far less suffering than were some of the cases which he cites. Further, in cases of direct exposure to diphtheria, the possibility of contracting the disease is comparatively small. In persons in whom an immunizinz dose of antitoxin has been given and who later contract diphtheria, an attempt should be made to regulate the dosage in comparison with the severity of the infection, and not to push the serum too far, and thus overneutralize the toxin, possibly producing this distressing condition of urticaria. A positive clinical diagnosis of diphtheria is often utterly impossible, regardless of the amount of experience possessed by the clinician, and consequently all suspicious cases should be treated as diphtheria until proved otherwise, by antitoxin, since the possibility of trouble caused by the antitoxin is not to be compared with that of the danger from diphtheria.

Styracol: In the *Therapeutic Gazette* for June (*Folia Therapeutica*), Raw treats of the modern treatment of tuberculosis by drugs. He is convinced that few drugs have much influence in checking the progress of tuberculosis and also that the treatment of the future will be by means of tuberculin and serumtherapy. He believes the best drugs we possess are creosote and its derivatives and states that the drug which seems to give the most encouraging results in the treatment of phthisis with intestinal ulceration is styracol. It is a guaiacol-cinnamic ester, is a white crystalline powder, is insoluble in cold water, but dissolves in 40 parts of alcohol and in chloroform, and is quite readily soluble in hot olive oil. Styracol seems to generate a large amount of free guaiacol and also liberates the strongly antiseptic cinnamic acid. The advantages claimed for it, in the treatment of phthisis and abdominal forms of tuberculosis, are as follows: 1. It is not toxic if given in therapeutic doses. It passes through the stomach unchanged and does not injure the mucous membrane. 2. It is odorless, free from any taste of guaiacol and is pleasant to take. 3. When it reaches the small intestine, it gives off guaiacol, which affects the whole system. 4. It liberates cinnamic acid, which acts as a powerful antiseptic to the intestinal tract. Having used it in a large number of tuberculous cases, the author thinks it the best method of giving guaiacol, and when there is secondary ulceration of the intestines, with offensive and persistent diarrhea, its action is excellent, in many cases checking the diarrhea at once, with rapid disappearance of the offensive odor. Carroll Chase, in *Merck's Archives* for May, also reports very favorably as to the action of styracol. Its physiologic action is, briefly, that of its constituents, guaiacol and cinnamic acid, without the irritating effect on the stomach of either. It is said to liberate in the intestinal canal a larger proportion of its guaiacol (up to 85%) than any other synthetic preparation of that substance. Two cases of diarrhea in patients in the third stage of pulmonary tuberculosis yielded to the remedy with gratifying promptness, constipation in fact ensuing. He has also found it of aid in fermentative diarrhea and in headache, presumably of an autoinfective character. He usually gives 15 grains three or four times daily and believes it merits careful and extended trial from the medical profession.

Autoprotection: In the May number of the *Monthly Cyclopedia* and *Medical Bulletin,* Chas. DeM. Sajous asserts that we should look to the autoprotective resources of the body, and the laws through which drugs influence them, for scientific therapeutics. He adds that the entire trend of medical thought is in this direction and that the study of immunity has captivated the best minds of modern times. He urges that when a disease is due to the presence of pathogenic bacteria, our aim should be to so enhance the defensive properties of the blood with our remedies that the disease-breeding agents will promptly be destroyed and converted into eliminable end-products He believes the defensive powers of the body are enhanced by drugs which stimulate the activity of those organs producing internal secretions and which he has termed the "adrenal system," viz: the pituitary body, the thyroid gland (including the parathyroids) and the adrenals. His fundamental principle is that *immunizing medication is the foundation of rational therapeutics.* He uses the term "antitoxigen" to indicate the group of agents which, through their action on the adrenal system, produce an excess of autoantitoxin in the blood. The most active antitoxigens in infections and intoxications include some of the drugs now known as alteratives whose physiologic action has remained obscure. Thyroid preparations are very active and provide the blood, he believes, with an excess of opsonin. Iodin and mercury also have this power. Creosote, too, has this action ascribed to it. The most active of the tonics also excite the adrenothyroid center, but only sufficiently to enhance general nutrition. Strychnin is placed here, and the beneficial action of digitalis in heart disorders is stated to be due to a marked stimulating action on the adrenothyroid center. Strophanthus, apocynum, convallaria and other heart tonics act in a similar way, but with less vigor. The true hypnotics markedly depress the adrenothyroid center.

Whooping-Cough: In *Merck's Archives* for June, R. J. Smith states that there are two remedies absolutely indicated in whooping-cough. The treatment is directed against the causative factor by the use of an efficient active preparation of calcium sulphid. Used early and freely this remedy will without question shorten the attack. To children the drug is preferably given in one-sixth grain doses, one to three such doses every half to one hour usually being sufficient to bring the patient under control in a few hours. This will be shown by the ill-smelling eructations, which may cause slight nausea, or by the characteristic odor from the breath and excretions. Many children chew the granules without distaste and the local action is then more rapid. The remedy must be pushed until an effect is produced and continued during the course of the disease. Its action is germicidal, it is harmless and may be given freely. The other remedy is atropin, the active principle of belladonna, which for 50 years has been the one drug of utility and which retains its reputation at the present time. It is antispasmodic and sedative, lessening the number of attacks and mitigating their severity. Atropin, the valerianate of atropin by choice, prevents the spasm, straining is relieved, and injury to lung tissue or cerebral vessels is less apt to occur. Children stand atropin better than adults, and sufficient must be given to retard spasms of coughing. These are the dominant remedies in the treatment, other remedies being added according to the exigencies of the case.

Tuberculous Peritonitis: In the *Medical Record* for May 2, Sidney F. Wilcox advocates the inunction of iodoform in tuberculous peritonitis. Iodoform has long been recognized as the most powerful agent for the local treatment of tuberculosis. It acts directly on the bacilli, but in order to obtain its bactericidal effect it must be brought into direct contact with the organisms. In tuberculous peritonitis it would not be possible to bring iodoform powder into actual contact with the diseased focus without an operation, and it was with the idea of rendering iodoform easily absorbable that he was led to make the solution which he employs. He makes an ethereal solution of the drug and pours it into a bottle of oil, with which it makes a perfect solution. The proportions he has most employed are as follows: Iodoform, ʒ ii, ether, ℥ ii ss, add olive or cod-liver oil to make ℥ viii. This is applied by inunction to the abdomen night and morning. He also suggests that it might be of advantage in pulmonary tuberculosis or even in tuberculous meningitis.

Gonococcic Vaccine: Edgar G. Ballenger, in the *Journal A. M. A.* for May 30, reports the results of his experience with gonococcic "vaccine" or "bacterin" as very satisfactory. Although other measures were used, the results were much more prompt than he had ever been able to obtain with these same remedies before beginning the use of the bacterins. The matter of "personal" or "stock" bacterin is one of considerable interest and importance. As far as he is able to judge from his own experience, there is very little variation in the gonococcus and about as good results are obtained with the stock vaccine as with the personal. The difference in the severity and course of the disease in different individuals is due almost entirely to the varying resistance of the host. He has given the bacterin treatment to 26 patients and feels no hesitation in saying that he has been able in nearly all cases to obtain more satisfactory results with it than with the various forms of treatment previously used. Until recently he has not given the vaccine to patients during the acute stage, but has waited until the subsiding stage. One recent case, however, so treated made an unusually quick recovery. In no instance was a patient made worse by the injections except that in a few cases there was a slight increase in the discharge during the negative phase when the initial dose was too large. His best results have been obtained with doses varying from five to 50 million gonococci. In acute gonorrhea, the initial dose should not exceed five or 10 million but may be repeated somewhat earlier than when larger amounts are used. The injections were made in the subcutaneous tissue of the buttock as here the minimum amount of pain is produced. It is well to begin with 15 million in chronic cases, and gradually increase the amount at subsequent injections according to the reaction produced. Usually the succeeding injections should be given before the improvement of the previous one has entirely disappeared. This varies from five to eight days. From five to eight injections were required for the average case, but more in cases in which recrudescence occurred.

Bromural: H. A. Cassebeer, in *Merck's Archives* for April, calls attention to bromural, a new sedative and hypnotic. It occurs in the form of small white flakes with an odor faintly suggestive of valerian. It is easily soluble in hot water and alcohol, but is practically insoluble in cold water. Bromural acts as a nerve sedative when taken in doses of five grains several times daily. When administered just before retiring in doses of five to 10 grains it acts as a hypnotic in from five to 25 minutes. Larger doses do not produce any stronger action. In all cases the effect probably wears off in three to five hours. No secondary action or injurious by-effects on stomach, intestines, central nervous system, or the circulation were noted and no narcotic after-effects. The drug was well borne, even in cases of heart disease and gastro-intestinal derangements. In no case was there ever any sleepiness or heaviness the next day. The drug proved of especial value as an hypnotic in the aged. Runck calls attention to the beneficial effects of bromural in excessive night-sweats, and it has also been used successfully in the treatment of the insane. It fails when pain is present and so seems to possess only a mild hypnotic action. Attention is called to the fact that it acts almost exclusively as a nerve sedative, its hypnotic power depending entirely upon its creating a quiet state of the nerves whereby natural sleep is attained. It is especially efficient in all forms of nervous excitability and insomnia so frequently associated with mental overwork and financial worry, hysteria, etc. It does not cause a rash, or any of the other symptoms obtained with the bromids, nor does it show the stimulating effects of valerian. As regards administration, it is best dispensed in tablet form or in capsules. In general nervousness five grains every three hours is sufficient and as an hypnotic 10 grains at bed-time. Children in general take two or three grains several times daily and for babies one grain is sufficient.

Coal-Gas Poisoning: The *Critic and Guide* for May calls attention to a remedy in coal-gas asphyxia that has proved very efficient, but with which perhaps not many are familiar. The remedy consists in the administration of hydrogen dioxid by rectum and by mouth. Per rectum it is given in full strength; per os it is diluted with an equal volume of water. The dose of the dioxid by rectum is about two ounces; by mouth about one ounce; and it may be frequently repeated. The usefulness of the treatment depends upon the absorption of oxygen from the hydrogen peroxid into the blood-current. A piece of ice inserted into the rectum is a great adjuvant, as it has quite a remarkable effect in restoring consciousness.

Book Reviews

Sex of Offspring. By Frank Kraft, M. D. Modern discoveries as to sex-determination. The power of farmers to choose the sex of animals, or parents that of issue. $2.00 prepaid. B. Barsuette, Pub., Williamson Bldg., Cleveland, O.

In this little book the author seeks to "open up to a patient and long expectant world what has been one of Nature's most closely kept secrets"—namely, the laws governing the control of sex. It contains nothing original—even most of the mistakes and misstatements together with the theory as a whole having been published previously (although no credit is given) by Thos. E. Reed in the *New York Medical Times,* in a series of papers appearing in the latter part of 1906. The author believes the ovum is hermaphroditic and that the predominant sex alternates regularly from male to female at constantly recurring intervals of six hours, these intervals corresponding to high and low tide and representing periods of starvation and plenty suffered by our Darwinian semi-aquatic ancestors millions of years ago. If fertilization of the ovum takes place at lunar high tide the offspring will be a male, while if the egg is fertilized during low tide, the result will be a female. Many of the so-called facts upon which he bases the practical working of his theory are not generally accepted by modern scientists and several are known to be false. For instance, "It is generally accepted that the ovum is double-sexed." Such is not the view accepted by present day cytologists with regard to the matured ovum. His statement that "Fertilization consists primarily, if not wholly, in the contact of the spermatozoa with the ovum" might possibly have passed undisputed a century ago. He assumes that ovulation and menstruation are synchronous processes, a point much disputed but with the balance of evidence indicating that ovulation occurs considerably earlier. His statement that fertilization occurs at or near the instant of coition is entirely at variance with the known fact that it may occur a week or 10 days after the last copulation and probably always many hours later. Another statement worthy of the eighteenth century is that the male is a mere passive factor in fertilization and has nothing to do with the transmission of sex. The entire book shows a great lack of knowledge of recent literature in cytology and embryology without which no such difficult problem as that of sex inheritance should be approached.

Insomnia and Nerve Strain, by Henry S. Upson, Professor of Diseases of the Nervous System in the Western Reserve Medical College; Attending Neurologist, Lakeside Hospital. Cleveland, Ohio. G. P. Putnam's Sons, Publishers. Knickerbocker Press. New York.

This attractive little volume hardly lends itself to summarising. In reality it is a report of an investigation recently conducted by H. S. Upson of this city relative to the importance of visceral derangements as etiologic factors of diseases of the nervous system. The author takes the affirmative side of this mooted question and emphatically contends that in obscure mental and nervous affections, disorders of the teeth are the most significant of the physical causes. He briefly outlines some 25 cases, including hysteria minor, neurasthenia, dementia precox, insomnia, and states of mental exaltation and depression, which have been cured by the correction of existant dental diseases, but it is extremely questionable whether these cases have been observed long enough to warrant their being dismissed as actual cures. The opinion cherished by alienists and neurologists today, is not, however, in accord with these theories but rather that physical factors are mere provocative agencies, acting on an unstable brain, and that the true cause is confined within the individual and is part and parcel of his mental development. From this point of view, it is indeed difficult to admit that impacted molars, dental caries or pyorrhea alveolaris will disrupt the mentalization of a normally developed individual sufficiently to produce actual insanity. Then again it must be conceded that thousands of persons go through life with extensive diseases of the teeth and never evince any evidence of mental alienation. But with all this the theories advanced by the author are novel and interesting and those who have applied themselves to the study of the diseases of the nervous system will read this book with profit and find much for future thought and reflection. The author has presented his conceptions in a most attractive and entertaining manner and time alone will say whether his deductions will rest on true scientific ground. The treatment of insomnia if carried out along the lines suggested will not only benefit a great number of distressing conditions but will undoubtedly curtail the indiscriminate use of hypnotics at present prevailing.

The closing chapter by Lodge on the technic of dental skiagraphy will prove valuable to many engaged in this branch of practise. The excellence of the reproductions is a pleasing feature of the work.

The Principles and Practice of Hydrotherapy, a Guide to the Application of Water in Disease, for students and practitioners of medicine, by Simon Baruch, M. D., Professor of Hydrotherapy in Columbia University (College of Physicians and Surgeons), New York; Medical Director of the Hydriatric Department of the Riverside Association; Consulting Physician to the J. Hood Wright Memorial (formerly Manhattan General) Hospital; to the Montefiore Hospital for Chronic Invalids; Member of the New York Academy of Medicine; Formerly Gynecologist to the Northeastern Dispensary; Physician for Eye, Ear, and Throat to the Northwestern Dispensary of New York City; Physician and Surgeon to the New York Juvenile Asylum, and Chief of the Medical Staff of the Montefiore Home for Chronic Invalids. Third edition, revised and enlarged, with numerous illustrations. New York. William Wood and Company, 1908.

No single volume on this important subject contains as much practical information on the scientific use of water in health and disease as the third edition of Baruch. Coming, as it does, from a keenly observant general practitioner whose extensive hospital affiliations have afforded him ample opportunity for the application of hydrotherapeutic measures in all disorders, the information imparted will prove extremely valuable to all physicians and nurses.

Hydrotherapy today is a recognized adjunct in the treatment of the sick. No institution caring for affections of the nervous system would be considered complete without such equipment. Through its employment, State Hospitals report a higher percentage of recoveries and incidentally the use of chemical and mechanical restraint has been reduced to a minimum. In this excellent volume the author concisely describes the physical properties of water, its effect upon the pulse, blood-pressure, and lymph movements, and the influence of hydriatic applications upon respiration, the muscular system, temperature and tissue change. He adequately outlines the contraindications of the use of water and graphically describes the technic and procedure of such measures in the various disorders.

The chapter on the hydrotherapeutic prescription is not only timely but important and will tend to place this popular form of treatment on a more systematic and definite plane.

The work is attractively illustrated and will prove a ready reference to the busy practitioner as well as those engaged in the special branches of medicine.

State Board Questions and Answers. By R. Max Goepp, M. D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Octavo volume of 684 pages. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, $4.00 net. Half Morocco, $5.50 net.

In default of a better method of estimating a student's knowledge of any subject, the written examination must remain the principal test whereby State Boards and other examining bodies can determine the qualifications of a candidate. The ability to answer the questions submitted in a concise and intelligible manner is therefore a valuable asset of the student. It is not always the best trained man or the one with the widest knowledge of the subject who submits the best answers to the questions asked. Training in answering such questions is therefore most important and the usefulness of this book lies in the assistance it will give in such preparation. The questions have been selected from a large number of examinations held by the boards of the principal States and the answers have been prepared in as concise a manner as possible and without digression from the scope of the question—a mistake often made by candidates. The work is not intended to take the place of textbooks but will prove of decided value in demonstrating to the student his grasp of the subject and in furnishing a model for the construction of his answers.

Practice of Medicine for Nurses. By George Howard Hoxie, M. D., Professor of Internal Medicine, University of Kansas. With a chapter on the Technic of Nursing, by Pearl L. Laptad, Principal of the Training School for Nurses, University of Kansas. 12mo of 248 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, $1.50 net.

This work seems to satisfactorily answer the demand for a book which will give sufficient information to nurses to enable them to aid intelligently the physician in the care of medical cases. Such an acquaintance with the course of a disease and the symptoms of beginning complications will render a nurse of far more value to the physician and will also stimulate her to take a greater interest in the case. The subject matter is well arranged although the terminology at times would be rather unintelligible to a lay person who had had no hospital training.

Subcutaneous Hydrocarbon Protheses. By F. Strange Kolle, M. D., Author of "The Recent Röntgen Discovery"; "The X-Rays, Their Production and Application"; "Medico-Surgical Radiography," etc., etc. The Grafton Press, Publishers, New York.

This is a very practical book of about 150 pages on a subject which has been rather neglected outside of the eastern cities. The hydrocarbons have been used for the repair of deformities of the nose resulting from accident, disease or operation, and for the filling out of defects made by sinus and mastoid operations, but little has been done in the west in the large field of the general prothetic artist. This book points out many of the conditions in which paraffin injection is of value, carefully describes the author's methods and tells of the dangers of the work in the different regions. A number of illustrations are given to show the instruments used and some of the results obtained in different cases.

Acknowledgements

Index Catalog of Medical and Veterinary Zoology. Subjects: Trematoda and Trematode Diseases, by Chas. Wardell Stiles and Albert Hassall.

Influence of Food Preservatives and Artificial Colors on Digestion and Health, by H. W. Wiley, M. D.

Textbook of Surgical Anatomy, William Francis Campbell. Saunders.

Goepp's State Board Questions and Answers. Saunders.

Practice of Medicine for Nurses. Geo. H. Hoxie. Saunders.

Monthly Bulletin, New York State Department of Health.

REPRINTS

Oxygen in Medicine and Surgery, William Seaman Bainbridge.

The Value of an Absolutely Vegetarian Diet in Psoriasis, L. Duncan Bulkley, New York City.

The Influence of Alcohol on the Opsonic Power of the Blood, Chas. E. Stewart.

The Influence of Flesh-Eating on Endurance, Irving Fisher.

The Hydriatic Method in the Treatment of Cardiac Disease, J. H. Kellogg.

The Cultivation and Handling of Goldenseal, Alice Henkel and G. Fred Klugh.

Medical News

S. H. Burroughs, of Ashtabula, received a fracture of the arm while cranking his automobile, July 29.

E. H. Season, this city, who underwent an operation for appendicitis early in June, has made a good recovery.

J. V. Gallagher has moved his office to 254 Lennox Building.

H. A. Becker, this city, who has been laid up for some time with typhoid fever is now progressing favorably.

S. H. Large, this city, who was operated upon for appendicitis in June, has made a good recovery.

P. A. Jacobs, of this city, is in London, England, studying serum diagnosis and vaccine therapy in the laboratory of Sir A. E. Wright.

Huron Road Hospital is to be closed until October 1 for extensive repairs.

The American Academy of Ophthalmology and Oto-Laryngology will hold the thirteenth annual meeting at the Hollenden Hotel, Cleveland, on August 27, 28 and 29. The address on Ophthalmology ''Concerning the Etiology of Choroiditis'' will be delivered by J. B. Lawford, of London, England, during the morning session on August 28. A lengthy program has been provided which will prove of great interest not only to specialists but to the general practitioner. The committee on arrangements consists of S. H. Large, chairman; A. R. Baker, W. E. Bruner, H. A. Sherman, J. N. Lenker and W. R. Lincoln. Members of the profession not affiliated with the Society are extended a cordial invitation to be present at the meeting.

A Board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B street S.E., Washington, D. C., Monday, Sept. 14, 1908, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service. For further information, or for invitation to appear before the board of examiners, address ''Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.''

The United States Civil Service Commission announces an examination on August 26, 1908, to secure eligibles from which to make certification to fill a vacancy in the position of clinical director in the Government Hospital for the Insane, at a salary of $2,000 per annum, with maintenance in the Hospital, and vacancies requiring similar qualifications as they may occur in any branch of the service. Also an examination on September 2-3, 1908, to secure eligibles from which to make certification to fill a vacancy in the position of first assistant surgeon (male), Freedmen's Hospital, at $1,500 per annum, and vacancies requiring similar qualifications as they may occur at that hospital.

Applicants should at once apply to the United States Civil Service Commission, Washington, D. C., for application forms.

Essays will be received in competition for the Samuel D. Gross Prize of $1,500 until January 1st, 1910. The conditions annexed by the testator are that the prize ''Shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens.''

It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to the ''Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th St., Philadelphia,'' on or before January 1, 1910. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

Deaths

Frank D Kraft, of this city, died July 19, aged 57.

John P. West, of Bellaire, O., died June 25, aged 49.

Simon P. Snider, of this city, died June 25, aged 56.

Frederick Fliedner, of this city, died July 12, aged 64.

Jas. C. Culbertson, of Cincinnati, died June 4, aged 67.

John W. Thatcher, of Marion, O., died July 16, aged 78.

Alfred D. Becket, of Limaville, O., died June 28, aged 53.

Wm. A. Jansen, of Miamisburg, O., died June 10, aged 84.

Samuel B. Lightner, of Sabina, O., died June 24, aged 68.

Samuel Rothacker, of Richmond, O., died June 25, aged 83.

Cornelius Honaker, of Pond Run, O., died June 15, aged 76.

Walter P. Hanning, of Nelsonville, O., died July 8, aged 29.

Alexander F. Joseph, of Cincinnati, O., died July 7, aged 68.

John D. Mulhane, of Steubenville, O., died July 15, aged 50.

Frederick Habermehl, of Clarington, O., died July 8, aged 73.

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Ancient Surgery

By C. W. WYCOFF

The history of the existence of surgery if plotted on a chart would somewhat simulate the appearance of two paroxysms in a fever of the tertian malarial type. The first paroxysm reaches its height after a long and tedious climb of nearly eight thousand years, bringing it to the fifth century B. C., then follows a depression and an intermission including the medieval times and ending in the thirteenth or fourteenth centuries A. D., when the second paroxysm begins. The crisis of the latter has not yet been attained. Hence you will all understand that the subject "Ancient Surgery" includes besides the surgery of the peoples up to the twelfth and thirteenth centuries of our own era, known to us as the ancients, the surgery of the world up until the advent of anesthesia in the nineteenth century, when our so-called genuine modern surgery begins.

The beginnings of surgery and medicine are hardly separable. Primitive uncivilized man had an instinctive knowledge of both. When wounded he probably knew from previous experience that a severe loss of blood weakened him, hence he first checked the flow of blood by one means or another, and applied bark or leaves as a protective agent. If joints were dislocated or bones fractured the affected part was made as straight as possible and light bark splints applied to keep it at rest. Great reliance was placed on the natural recuperative power of the tissues—a simple fact afterwards long forgotten but finally rediscovered. Superstition was the all powerful mental octopus of the ancients and even of the Middle Ages. It dominated all peoples from the uncivilized savage to the most highly educated Greek, the latter to a less degree. This was a great drawback to surgery. Wounds of every description and all diseases were

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Read before the Allen Medical Society of the W. R. U. Medical College, Feb. 12, 1907 for ages thought to be visitations from a demon or a punishment inflicted by an enraged god. Many of these peoples would not have their physical sufferings alleviated in the least for fear of incurring additional anger on the part of the higher powers. Hence it was only natural that those who healed physical ills should be looked upon as endowed with preternatural power. They belonged to the religious combine of those days which remained more or less intact until the thirteenth century. Surgery and medicine were then made subordinate to the commands of the priests and those in charge of the different religions for two or three centuries, and finally were completely dropped. At this time, then, it might be said, scientific surgery and medicine began.

Surgery might be called the daughter of warfare, for the latter required surgical skill from the beginning. Physicians were among the first in the armies of the warfaring Pharaohs of Egypt. In the Homeric poems we also read of the armies with their attending surgeons, and it naturally followed that when the ancient weapons of warfare—the arrow, spear, lance, battle-axe, etc.—were replaced by more death-dealing mechanisms surgery was markedly changed.

The greatest drawback to the ancients and the one which any humane person in our modern times would utterly abhor on account of the extreme cruelty ensuing was the absence of anesthetics, and when we read of the operative procedures attempted, such as laparotomy, herniotomy, enterotomy, oöphorectomy, and many others of like serious nature, it is almost beyond our comprehension to realize not only the most extreme suffering of the patient but the ability of the nervous mechanism to recover itself from the degree of shock to which it was subjected. The patient was held down on the operating table by main strength, often being strapped down in addition. A surgeon's requisites were to have several very strong attendants, to completely ignore the outcries of the patient and to work with great dexterity and boldness. This latter he surely must have possessed to have undertaken what he did, with his small fund of knowledge as to what he was doing. In addition to this their antisepsis was nil which must have allowed an overwhelming growth of pus organisms, endangering the patient's life so much the more. Undoubtedly statistics showing recoveries and deaths would have been very unpopular among the surgeons in those days. Far better must it have been to await the course of nature, as slow and torturing as she sometimes may be in her death dealing force, than to come under the bloody iron of the surgeon, yet there are many reports of recoveries. The mortality in our modern surgery with its complete anesthesia, power of stopping hemorrhage, its antisepsis, and most extreme aseptic precautions, would surely seem very low to us could we but glance at the percentage of mortality in ancient surgery. We might almost feel satisfied with modern surgery, as far from perfection as we know it to be. Ancient surgeons were also greatly handicapped by their almost entire lack of knowledge of the structure of the human body from anatomic dissections. This condition lasted until the Alexandrian epoch in 300 B. C. Human dissection was held to be one of the most sacriligious of acts. Those who made the small abdominal incisions, done by means of a hard, sharp, flint stone, in the cadaver for the purpose of embalming were as a class held in absolute disgrace and contempt. As soon as such an incision was made the operator had to flee for his life, chased and pelted with stones by those who took charge of the body after the incision was made. Evidently the most of their anatomic knowledge consisted of that derived from animal dissection. The hog was especially chosen, as its entrails were supposed to be an exact reproduction of the entrails of man.

Let us now take up the development of ancient surgery among the different civilized peoples. Old Egypt, probably the most time-worn of civilized countries, gives us the most reliable records of that beginning dawn of civilization, dating as far back as 8000 B. C. In the bandaging of her mummies with single strips of linen one thousand yards in length, we are told that she shows a skill unsurpassed in modern surgery. It is said that all forms of bandaging in our days are greatly inferior in quality and less in number, compared to those of the embalmers. The priest-physician of ancient surgery showed great dexterity in operative surgery. They bandaged suppurating wounds and ulcers, often performed venesection, and cupping was frequent, being accomplished by applying cow horns with the pointed end cut off, the air being sucked out and the end plugged or a wick was burned in it to consume the air. Their religion necessitated the sacrifice of living tissue from some part of every male's body, hence circumcision. This was performed with knives of flint. Their most improved method of castration was crushing or pounding the testicles. Knives were rarely used for this. The operation was so successful, incredible as it may seem, that the most of the eunuchs were thus supplied by Egypt up to the time of the Roman Empire. Lithotomy was carried on with great prowess. Skill was also displayed in their ophthalmic surgery. Amputations were often practised, but it is not known how they stanched the hemorrhage unless pitch or a hot iron was applied to the bleeding stump, together with a tight bandage. Their mummies bear evidences of perfectly set fractures and artificial teeth have also been found. Their only surgical instruments known are those in the museums, such as lancets, probes, knives, scissors and forceps—all very crude.

It was from Egyptian surgery that the wandering Jew derived a large amount of what knowledge he had of the subject. However, the Assyrian and Babylonian captivities increased the value of Jewish surgery. The Old Testament is our record of their surgical achievements up until the Babylonian captivity. Beginning with this the great Talmud takes up the subject. The surgery of the first period was exceedingly limited. Hernia was known to them and one thus afflicted was expelled from their congregation. Castration was also known, but forbidden by law. Circumcision was their only stronghold and this of course was directly borrowed from the Egyptians. It is supposed that this custom was enforced by them more to increase their fruitfulness and better their hygiene. The Jews were the first people to strictly observe public hygiene in every detail.

The surgery of the Talmud is much more extensive. It comprises a knowledge of dislocations of the femur, contusions of the skull, perforations of the lungs, esophagus, stomach, small intestine and gall-bladder, also of wounds to the spinal cord, pia mater, trachea, rib fractures and oral and nasal polypi. The last being credited as a punishment for past sins. For sciatica very simple treatment was given—the hip was rubbed 60 times with meat broth. Their treatment for stone in the bladder is also singular enough: "A louse was caught from a man, another from a woman, the one was fixed to the breast of the woman, the other to the penis of the man, then they urinated in a blackberry bush, while someone watched whether the stone escaped or not." No cures were reported. Venesection was a very ordinary procedure, carried on by the mechanics and barbers. Circumcision of hermaphrodites is mentioned, also an operation by which these unfortunates might be capable of coitus. For imperforate anus the anal parts were first well oiled then exposed to the rays of the sun, after which an incision the size of a barley corn was made.

The accomplishments of the Hebrew in surgery amount to but little compared to the knowledge on the subject of that old and once highly civilized race of the Hindus, second in antiquity to none but Egypt and greatly dependent upon the priest-physicians of the latter for their surgical wisdom. Their writings from which we gain our knowledge date back only to 1500 B. C. More than one hundred surgical instruments made of a substance similar to steel were employed by them. It was required that the instruments have good handles, firm joints, be well polished and sharp enough to divide a hair, should be perfectly clean, and kept wrapped in flannel in a box. There were scalpels, bistouries, lancets, scarifiers, saws, bone-nippers, scissors, trocars, needles, blunt hooks, loops, probes, caustic holders, directors, sounds, scoops (curettes probably), forceps, also catheters, syringes, rectal specula and bougies. Their favorite splint for fractures was made of thin narrow strips of bamboo bound together by string, and cut to any desired length. Hence we see that they were excellently equipped with surgical supplies for those days. Of the surgical affections known were fractures, lithiasis, hernia, abscesses and ulcers. Under the latter syphilis is thus described: "The cause of ulcers on the penis is too vigorous intercourse with a woman whose vagina is diseased. If the ulcer cannot be cured by sulphate of copper and red arsenic and the member smells very offensive, the cautery must be resorted to." Phimosis, paraphimosis, orchitis, epididymitis, fistula in ano, hemorrhoidal tumors, tumors in general, also lepra, elephantiasis and wounds are described in a fairly intelligent manner for those times. Dislocations were treated by traction, countertraction, circumduction and various other dexterous manipulations. Cuts of the face and head were sewed. Great skill was shown in removing foreign bodies, as arrow heads and the like, from the flesh. The magnet was often used for iron particles. Bleeding by leeches, poulticing and fomenting were frequently employed in inflammation. Abscesses were opened—in those of the breast the milk ducts were to be avoided. In amputation, the stump was treated with boiling oil and pitch and placed in a cup-shaped bandage. Paracentesis abdominis was frequently practised. Tumors and enlarged lymphatic glands were excised and an arsenical salve applied to the raw surface to prevent recurrence. Intestinal concretions were operated upon. A short incision was made in the abdomen, a little to the left of the mid-line below the umbilicus, a very small portion of the bowel was pulled out at a time and examined. When the concretion was found it was removed, the intestine stitched together and anointed with ghee—a sort of butter and honey—and replaced. Their operations in rhinoplasty have even been consulted by some of our modern surgeons. Oöphorectomy, a so-called modern operation, was performed in order to curb the lust of some women. Possibly a description of lithotomy will now suffice to convince you that the Hindus were extraordinarily proficient in surgery. In women the incision was made through the urethra or vagina, but in men the high operation was necessary. A description of the latter, taken from a translation, is as follows: "The physician presses with his hand from the navel of the patient downward until the stone has slipped down. Then he carries his oiled fingers (the left index and middle fingers, the nails of which have been cut close) into the anus, passing along the raphe, stretches carefully but forcibly the tissues between the penis and anus, grasps the insensitive undistended and smooth bladder, pressing strongly upward with the two fingers so that the stone projects as a hard tumor above the symphisis pubis. At this point he makes an incision and extracts the stone. The physician should take pains to avoid splitting or breaking the stone, for a single fragment left behind, even though it be small, grows up anew. Therefore the physician should draw out the entire stone with the forceps."

In operative midwifery the Hindus were well versed. An operation similar to Cesarean section was performed upon women who died very late in pregnancy. Cephalic and podalic version, embryulcia and embryotomy and also craniotomy were some of their ventures. In cases of removing a dead child the following was the procedure: The physician would first get the woman in good cheer then he grasped a sickle shaped knife, cut the head of the child into pieces, drew down the cranial bones, seized the breast or shoulder by means of a hook and dragged out the body. Whatever part first presented itself must be cut off. If the abdomen was near and was distended an incision was made into it, the intestines drawn out and the rest of the body being more pliant was easily extracted. Above all things the physician was to guard the woman against injury. The preparation for an operation is described in Dr. Wise's "Hindu Medicine" as follows: "A fortunate moment was selected. The Brahmans or priests and surgeons were lavished with gifts. The operating room had to be clean and well lighted, hot and cold water must be on hand, also milk, herbs and oil, strong attendants were required to hold the patient down. The knife was to be dipped into water before using, the sky had to be clear and the time near the new moon. The surgeon was required to be strong and dexterous with his fingers, he should not perspire nor make exclamations, and when cutting should avoid the palms of the hands, soles of the feet, bones, tendons, joints, vessels and nerves, these latter structures were not so-called by them. During the operation a fire, with sweet scented substances added, was to be kept burning in the room to prevent devils from entering the wounds made by the surgeons. At the end of the operation holy water was sprinkled upon the unfortunate and a prayer sent up to Brahma. The bandages were left on for three days then replaced by fresh ones."

Nearly all of these ancient kingdoms resemble organic life. They sprung up and thrived with great glory in nearly every branch, then, like a flower, faded and perished, and the Hindu learning did not escape this fate. There is one race, however, which has been distinctly inorganic. It went through a very few degrees of development, then, like a mighty mountain, remained the same, and this is the Chinese. Surgery, like the other accomplishments of this people, amounts to nothing at all in the world of progress. They claim, as do also many other peoples, to have produced a certain amount of anesthesia, but their claims are not well grounded. Yet with their knowledge of opium they might have produced a small amount of insensibility to pain. Acupuncture was their stand-by. They found three hundred and fifty odd places in the body where a needle could be inserted and twisted around with impunity, gold and silver needles being used for this purpose. Its object was to quicken vital spirits, giving a passage way for the winds, as they styled it. The only possible benefit derived might have been counter-irritation. Paracentesis of the eye, cupping and bleeding by various means, and application of moxas were known to them. The latter consisted of a cylinder of a slowly inflammable vegetable substance, which, when ignited, was placed upon the skin, acting as a cautery or counter-irritant. They treated fractures by extension. Their method of castration was somewhat radical and is a very good illustration of their surgery. The thighs and hypogastrium were first bandaged to check excessive hemorrhage, then the penis and scrotum were cut off close to the body.

Of Japanese ancient surgery no more can be said than of their near neighbor, China.

After such surgical procedures, which in fact should not be so termed, let us take up the surgery of a people who improved, purified, elevated and refined all the elements of other primitive races. These were the Greeks. Grecian surgery was largely patterned after that of the Egyptians and Hindus, but the Greeks made it more of an art, gave it a lustre, which, slight as it may seem to us, kept aglow the struggling flame of surgery in the centuries to come. Physicians then performed the duties of both surgeon and physician, and were held in high respect. It is very probable that there were regular surgeons with the armies. Lycurgus in his laws classed them as regular military officials. In the works of Homer the skill and dexterity of the surgeons in extracting darts, lances and broken sword points from wounds and cleansing and dressing them is frequently mentioned. As early as this date too there are evidences of separation of surgery and medicine, as will be seen in the following fragment of ancient history. It concerns two characters mentioned in the Homeric poems—Podalirius, a man of drugs, and Machaon, a man of surgery. Their father, Aesculapius, blesses them and sends them forth. "He bestowed the power of healing upon his two sons. Nevertheless he made one of the two, the more celebrated, for on the first did he bestow the lighter hand, that he might draw missiles from the flesh, sew up and heal wounds, but the second son he endowed with great precision of mind so as to understand what cannot be seen and to heal seemingly incurable diseases." Hence possibly the old withered idea that medicine was the higher branch of medical science.

The first great Greek in surgery and medicine was Aesculapius, who after death was deified as a god of medicine, including surgery. Above him was Apollo only, the healer of the wounds of the gods. Aesculapius is thought to have been an unrivalled physician living in the twelfth century, B. C. These four lines describe his treatment:

> "Lulling the pain with force of soothing charm
> Refreshing drinks he gave or grateful salve
> Unto their wounds applied: employed the knife
> To raise up others from their bed of pain."

A great many guilds of purely lay physicians were organized at the various famous Aesclepidean sanctuaries. Omitting now numerous men who played a small part in building up Grecian surgery, we will pass to the time of Hippocrates the Great, of Cos, the universally called First Father of Surgery and Medicine, living during the fifth century B. C. Hippocrates, as my hearers doubtless know, came in an age producing so many individuals with such innate greatness and who succeeded under such adverse conditions that all other ages hand it the laurel of universal honor. We read of such names as Pæonius, the sculptor, Demosthenes, the orator, Socrates and Plato, the philosophers, Herodotus and Xenophon, the historians, and many, many others as familiar as these.

Hippocrates was distinctly the creator of profane medical science in counter-distinction to that previously existing—the sacerdotal. He first broke asunder the shackles of superstition from our profession. It was he who drew forth the art from behind the deceptive veil of mystery and placed it under public gaze. Eight of his 17 genuine works were distinctly surgical. It is stated by good authority that he must have dissected a human body, even though his knowledge of certain parts was somewhat meagre. He confused the nerves, tendons and blood-vessels, called the brain a large mucous gland (in some cases we question the erroneousness of this last), yet he was the first to find that injury to one of the cerebral hemispheres caused hemiplegia of the opposite side of the body. He was best acquainted with the viscera, the joints and skeleton in general. In his treatise on fractures and dislocations, in many respects said to be unexcelled in modern writings, extension and counter-extension are described, beig accomplished by a crude apparatus of his own contrivance. Exact coaptation of the ends of fractured bones and care of the most extreme kind against shortening and deformity and also simplicity of dressings were among his general precepts. In case of much shortening, he advised the breaking of the corresponding sound bone to equalize the defect. He employed various methods of reduction. It was under him that orthopedic surgery had its beginning. His treatment of talipes in infancy was by manipulation and suitable bandaging, very similar to our own, and by stiff leather shoes. In compound fractures the projecting parts of the bones were carefully resected. In depressed skull fractures the trepan was used. If blood or pus had accumulated it was skilfully removed. On dislocations of the humerus these are his own words: "The head of the humerus is often luxated, but not upward on account of the acromion; nor backward by reason of the biceps; but rarely inward or outward; yet frequently and chiefly downwards." Luxation of the acromial end of the clavicle was known to him. This last bit of knowledge was lost from his time until the last century—a short space of twenty-three hundred years. Fractures of the spinous processes and vertebra did not escape his notice. The cause of spinal curvature he attributed to tubercles or lumps, nearly depriving Percival Pott of part of his medical monument. The head of the femur was described as being luxated upon the dorsum ilii or in the obturator region. In gangrene of a member he awaited the line of demarcation before amputating. Of distinctly operative procedures he trephined the skull, did paracentesis of the thorax and abdomen for fluid, the cavities first being percussed and ausculted. Abscesses of liver and kidney were opened. His diagnosis of these conditions is not known. Prolapsus ani was treated by a reposition of the gut. For fistula in ano some sort of a ligature was used. Hemorrhoids also received due attention. Hemorrhage was his insurmountable difficulty. Cold and compression are said to have been his means for checking it. Ulcers were treated with copper or zinc sulphate, verdigris, lead, sulphur, arsenic and alum. Raw tar-water was frequently used in treatment of wounds, a very near approach to antiseptic treatment by carbolic acid. Cupping, enemata, suppositories and pessaries were all employed. While operating Hippocrates demanded good light, good position and skilled assistants and always endeavored to be dexterous and to know what he was doing. "Inexperience," he said, "is the nurse of timidity and audacity," a very applicable saying for medicine and surgery of today. Of the cautery he said, (yet this was said before his time), "What drugs fail to cure, that the iron (meaning knife) cures; what iron cures not that the fire cures; but what fire fails to cure, this must be called incurable." He ascribed the cause of most eye diseases to a descent of humour from the brain. Mention was made of epidemic inflammations, styes, gray (probably senile) cataract and other external affections. Obstetric surgery was described in terms similar to our own. Such was the surgery of this great Greek described meagerly and in humble words. It is well worth the while of any young surgeon or physician of our day to read a brief sketch of the life and works of this first great father of our art.

The next epoch in surgery, if it might be so called, was not a one-man epoch as the preceding, but made up by many of lesser ability. It is the Alexandrian age, beginning about 300 B. C., and continuing until the third century A. D. The only gain to surgery was the knowledge derived from human dissection which was first publicly allowed shortly after the incoming of the age.

It was much protested by the Greeks and Egyptians as a godless proceeding, the same opinion being held by many of our more modern and educated laity of today. The surgical bandaging in this age was very complex and every operation was performed with the utmost nicety. The abdomen was commonly and freely opened, if only to apply a drug to an affected part within. Hemorrhage was explained as due first to an escape of air, then venous blood. No blood ever being found in the arteries of a cadaver it was assumed that these were air-containing. In this same Alexandrian age the Romans might be included. Their earlier surgery as well as medicine was almost nil. Physicians and surgeons were held in contempt and superstition held full sway. If it had not been for Celsus, a patrician and writer on ancient surgery and medicine, much of our historic knowledge of the subject would be lacking. His writings tell us of nothing new in surgery except his view of hernia, which he thought was the result of peritoneal laceration. If a hernia was reducible he advised turning up the sac and placing a ligature about its neck.

The next man of this period was the great Galen, the last renowned scholar of the Alexandrian school living in the second century A. D. Surgery was crowded out of his life to a large extent because of his ardent desire to make medicine a science, yet his name should be mentioned in our annals, for surgery was greatly benefited by his anatomic and physiologic findings in the circulatory and nervous mechanisms. He was the first to really practise ligation of arteries, knowing that these contained blood in the living body. He understood much better than any of his predecessors the function of the brain, cord and nerves, thereby being more conservative in his operations on the skull and spine. Resection of a portion of the sternum for caries of the bone is first credited to him. It was he who gave us such bandages as the sling, accipiter and spica. The last distinguished surgeon of antiquity and of whom we hear but little in our days is Antyllus, living in the third century, A. D. He not only performed many operations already known, but displayed originality. He first accurately described aneurism and its treatment. A ligature being placed above and below the sac, the latter was incised and evacuated. He practised subcutaneous sectioning of ligaments in stiffened joints, a procedure closely resembling our present tenotomy. Tracheotomy was also known to him. In a treatise on removal of glandular swellings in the neck he advises ligaturing of vessels before dividing, also giving a very careful description of how to avoid the carotid artery and jugular vein.

A century after the death of Antyllus marks the beginning of the Middle Ages, the first ages of cosmopolitanism, when races were for the first time being blended and universal sovereignty by one great power was ended for all time. Surgery began to wane. Medical science passed into the hands of the clergy and use of the knife became unpopular, probably on account of the ignorance and inability of the clergy in this line, and also due to the popular superstition again aroused and the retrogress of human anatomy, dissection being prohibited. This state of affairs existed until the Crusades in the thirteenth century when the use of weapons of warfare caused a slight reawakening of surgery. To Paul of Aegina, living in the seventh century, A. D., we are indebted for the surgical history of many centuries. Seven books were written by him, the sixth upon surgery alone. To Paulus himself is credited the principle of local blood-letting for any diseased part to the general blood-letting hitherto performed. In excising a cancerous breast he advised a crucial incision. He carefully described treatment of a fractured patella. Distinction was made between scrotal and ordinary (probably inguinal) hernia, the former being due to laceration of the peritoneum, the latter depending upon its stretching. In operation on scrotal hernia the testicles were also removed. Extirpation of the uterus, cutting adhesions of the pudendum, and excision of the tonsils are also among the operations he described. Then, after Paul, comes the five-hundred years repose of surgery, bringing us up to the time of the Crusades of which mention has been made before. The church, during this long interim (and great should our gratitude be to her) kept the ancient surgical works preserved in her monasteries. During the Crusades surgery was finally entirely forbidden the clergy because the church abhorred blood. Hence some of the ignorant laity, wishing a pastime, took up surgery, but no operation could be performed unless the church permitted. The profession was hardly as honorable as that of a common street laborer—it was a mere craft. This state of affairs continued through the thirteenth century, but in the fourteenth a faint streak of light appeared in this surgical darkness. Two or three notable schools came into existence. Surgeons were classed as superior and inferior, or barber surgeons, the latter doing tonsorial work for the monks and secondarily treating wounds, performing venesection and doing similar minor surgery. During this time the only two names worthy of mention are Lanfranchi and Guy de Chauliac, two Frenchmen, the former, second to Galen, distinguished between arterial and venous bleeding, using a ligature for the arterial bleeding. Guy de Chauliac performed many operations unique for his time. For abscess of the tonsil he had the patient swallow a piece of raw meat with a stout string attached, having previously given, so it is said, an anesthetic inhalation, then he drew out the meat with a sudden jerk, undoubtedly not wishing to use the knife on account of the copious hemorrhage. For gangrene he drew strips of plaster tightly around the limb just above the border of the adjacent healthy tissue, gradually forcing off the dead portion. He also first noted the healing of wounds by first intention.

In the latter part of the fifteenth century surgery was given another prod by Paracelsus. He wrote much upon it, severely criticising the surgeons for their uncleanliness. Soon, in the first half of the sixteenth century, the thirteen-hundred year repose of anatomy was broken in upon by the great anatomists, Vesalius and Fallopius, and by the advent at the same time of that illustrious Frenchman, Ambrose Paré. To sum up his life, it may be said that he began at the age of 19 where his family left off, in barber surgery, but when his work ended, 60 years later, the entire world was acknowledging him as its king in surgical authority. He was loved and revered by the rulers and the ruled. Yet out of all this great life there comes to surgery but two improvements for which we directly remember him, seeming now simple enough—the "letting alone" treatment of wounds and the end ligature of vessels in amputation, the cautery treatment previously existing. The nearest approach to end ligatures was Galen's ligation of vessels in continuity 13 centuries before—a very clear illustration of the slow pace of surgery in the dark ages. His new treatment of wounds he stumbled upon on the battlefield. His can of oil having become exhausted he was forced to use a simple ointment and afterward found that his patient thus treated recovered long before those treated with the painful hot oil.

Now passing over many lesser lights in surgery we come to the name of von Haller, a Swede, living during the first half of the eighteenth century. He elevated surgery not so much by his operations as by his teachings from his extensive knowledge of anatomy and his experimental physiology. It was comparatively easy for him, after Paré's surgical career, to instil into the public mind that surgery was not for the desecrating hands of ignorant craftsmen, but was an art of high calling. During von Haller's time Scotland produced two men never to be forgotten in surgery, namely William and John Hunter, living up to the close of the nineteenth century. Time is too limited to dwell upon the extensive works of these two modern-sighted surgeons. The story of Hunter's canal is well known to all of us, and is a mere instance to the many valuable gains surgery received from them. Living at the same time was a rival whose name is known to all of us by his description of tuberculosis of the spine and his well known fracture, it is that of Percival Pott.

Thus the story of surgery has been woven, many, many names of note being left unmentioned in this paper. From the innovation of general anesthesia as a reality, near the middle of the nineteenth century, it is generally conceded that modern surgery begins. The zeal and dexterity characterizing the very ancient surgery had been more than revived, the darkness of the Middle Ages had been dispelled, the Renaissance had placed the surgeon in a sphere befitting him.

In closing, as we gaze back into the twilight of ages, let our attitude be one of the greatest respect and admiration toward those surgeons and their surgery, handicapped on every side as they were, yet innately realizing that their motives were in accordance with nature's laws.

Report of Two Cases of Ectopic Gestation

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(1) *Multiple gestation:* References to cases in which an ectopic gestation occurred in both tubes simultaneously are sufficiently rare to warrant the report of every additional instance. Moreover, so far as I myself am concerned, the present instance is the first encountered by me in a fairly active gynecological practice extending over some twenty years.

The patient was referred to the gynecological ward from the medical ward of the Lakeside Hospital. She was 33 years of age, and had been married 11 years. She had had three children, the oldest 10 and the youngest seven years of age. She had had

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Read before the Lakeside Hospital Medical Society, April 29, 1908.

two miscarriages, the last having taken place six years previously. The menses had always been regular, but painful and profuse, and lasted, as a rule, seven days. On February 29, 1908, three days after the cessation of the last menstrual period, she was suddenly seized with sharp shooting pains in the lower adomen and both legs. The pain was most marked on the left side of the abdomen, and occurred every few minutes and took her breath away. The pains continued to be more or less severe until she was admitted to the medical ward on March 2 (three days after their appearance). On admission she had a slight bloody discharge from the vagina. Her temperature was 100° F., pulse 102, and the respirations were 28. The hemoglobin was 75%, and there was a leukocytosis of 13,000. After the bowels had been thoroughly opened, the abdominal pains became less. The tenderness was confined almost entirely to the lower abdominal zone. On March 6, the abdominal tenderness had practically disappeared and she felt fairly comfortable. On March 10, she was allowed to get out of bed, but during the day she was suddenly seized with an attack similar to the one that had occurred on February 29. On March 15 she was transferred to the gynecological service complaining of a feeling of distress and tenderness over the whole of the abdomen, but more particularly on the left side. The pulse was 100° F., the temperature 99.4° F.; the respirations were 24. There was a leukocytosis of 9,600. The personal and family history have no special bearing on the case.

The bimanual examination made at this time showed that the vaginal outlet was relaxed, the cervix was in the axis of the vagina, the uterus was enlarged and movable. On either side of the uterus an adherent tubo-ovarian mass, as large as a small orange, could be made out. A diagnosis of a ruptured ectopic gestation of the left tube, with an inflammatory involvement of the right tube and ovary, was made, and an abdominal operation was advised.

The history as given above suggests that one of the tubes had probably ruptured three days after the cessation of the last menstrual period, and that the other tube had probably ruptured 10 days later. The abdominal pain and her general condition became much worse after the rupture of the second sac.

An abdominal section was performed on March 18, 18 days after the first, and 10 days after the rupture of the second tube. About 400 c. c. of dark clotted and free blood was found in the abdominal cavity. The clots were adherent to the intestine and to the omentum. Portions of the clots resembled placental tissue. After separation of the intestinal and omental adhesions and those binding the left tube and ovary together, the tube was removed. The fimbriated end of the tube was enlarged and its lumen was filled with an organized blood-clot. The blood-clot also covered the outer surface of this portion of the tube and the adherent ovary. The adherent right tube and ovary were now separated, and attached to the fimbriated extremity of the dilated tube was found a considerable amount of organized blood, the condition being similar to that found in connection with the left tube and ovary. Both tubes seemed about equally enlarged. The right tube and the vermiform appendix were also removed. The abdomen was closed without drainage, and the patient made an uninterrupted convalescence.

The macroscopic and microscopic examination of the tubes was made by Dr. F. W. Hall and in brief is as follows:

Macroscopically: Each tube is 8 cm. in length and ½ cm. in diameter. Both are dark red in color; the surfaces are smooth and they are rather soft to the touch. In the middle portion of the left tube is a roughened and irregular piece of tissue adhering to and projecting from its wall. The tissue is soft and easily torn, suggesting the placental adhesion of an ectopic gestation. The right tube is in a similar condition to the left tube, except that the fimbriated extremity is torn through, thus causing the tube to gape open.

Microscopically: The left tube shows numerous large decidual-like cells, which in many places are arranged in nests or clumps, which resemble early chorionic villi. In the right tube decidual-like cells are also found in two or three places.

The left tube ruptured between the isthmial and fimbriated portions of the tube, whereas in the right tube the sac passed through the fimbriated extremity of the tube, with the occurrence of a tubal abortion.

(2) *Repeated ectopic gestation:** Heikel, in 1903, collected from the literature 82 cases in which an ectopic gestation had been observed twice in the same woman. Since his report many other cases have been put on record. Pestalozza has collected 111 cases. In some cases a few months, while in others several years had elapsed between the two pregnancies. Olshausen in 1889 at the meeting of the Berlin Obstetrical and Gynecological Society exhibited a child in good condition and then over a year

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*Abstract of literature made from Kelly's "Operative Gynecology."

old that had been delivered after a right tubal gestation. In the month before this meeting he had operated successfully a second time upon the mother for a left tubal pregnancy in the fifth week. In a case reported by Herman the second operation was performed three years after the first, and in a case reported by Coe there was an interval of 12 years between the two pregnancies. F. Schauta thinks that the accident can be explained by the occurrence of a one-sided tubal catarrh offering an obstruction and causing a pregnancy on that side, followed at a later date by a catarrh on the opposite side and a resulting tubal pregnancy. On this assumption K. Abel advises at the time of the first operation the removal of the opposite tube should it show the characteristic tortuosities or any interference of the lumen of the tube by a perisalpingitis.

The history of our patient, referred by Dr E. K. Smith, is as follows: She was aged 27, and was admitted to the Lakeside Hospital on March 15, 1908. She had been married eight years, and had had three miscarriages, the first one seven years before at the third month (induced), the second five years, and the third, one year before, both at the third month.

On January 21, 1905, she was first admitted to the Lakeside Hospital with a history that suggested a ruptured ectopic gestation. She also had a marked cystitis. On bimanual examination a fluctuant mass as large as a child's head could be made out occupying the pelvic cavity. Anterior to this mass, the enlarged uterus could be palpated. The pulse was 120, and the temperature was 102° F. The hemoglobin was 70%, and there was a leukocytosis of 15,000. On January 23, the mass was incised through the posterior vaginal vault. On opening into the sac, about a quart of fluid blood and organized blood-clots escaped. The sac was washed out and drained. Her convalescence was uninterrupted.

On November 16, 1906, she was admitted to the Lakeside Hospital again, suffering from a threatening abortion, and while in the hospital expelled some decidual material which showed evidences of inflammation.

On March 15, 1908, she was admitted to the Lakeside Hospital for the third time with the following history: The last menstrual period occurred January 15. On March 9, she was seized with a severe aching and bearing-down pain in the lower abdomen, which caused her to faint several times. Following this attack of pain she complained of more or less discomfort in the lower abdomen for the next five days. On March 14, she had a second attack of severe abdominal pain, with vomiting. On the next day some decidual-like tissue was expelled from the vagina. The abdomen was slightly distended and very sensitive. The pulse was 104, and the temperature was 101.4° F., the respirations were 24. The patient's general condition was fairly good.

On bimanual examination the slightly enlarged uterus could be made out occupying the median line of the pelvic cavity. Posteriorly to the uterus and extending to the right side of the pelvis, a fluctuant mass could be palpated as large as the closed fist. On the left side of the pelvis a sensitive adherent tube and ovary could be made out. After the patient's admission to the hospital the leukocytic count was made four times within four and one-half hours, the figures varying between 13,000 and 17,000. The hemoglobin was 85% and the red blood count 3,350,000. On the second day the leukocytosis was 13,700, and on the third day 13,000. She was kept under observation for a week during which time her general condition improved very much, the pulse falling to 104, the temperature to 99.2° F., and the leukocytosis to 12,300. The urine was normal.

From the clinical history and the bimanual examination a diagnosis was made of a ruptured ectopic gestation.

An abdominal section was performed on March 23, on the eighth day after her admission to the hospital. On opening the abdomen the structures in the pelvis were found to be generally bound down by moderately firm adhesions. The total amount of blood-clots and fluid blood in the abdominal cavity and the sac was about 1,500 c. c. No fresh bleeding was observed. The mass on the right side, which was as large as a child's head, consisted of the ruptured tube and the adherent ovary. The sac could not be entirely enucleated owing to its intimate relations with the posterior layer of the broad ligament and the pelvic wall. The greater portion of the sac together with the ovary were removed. The left tube and ovary, which were adherent, were separated and the tube was removed. In this tube we thought that we could recognize the scar of the former ruptured pregnancy. Vaginal drainage was instituted by means of gauze tapes. The abdomen was closed in the usual manner. The patient reacted from the operation fairly well, and after seven days all the gauze was removed from the cul-de-sac, and the patient's condition in every way was considered satisfactory. The catheterized specimen of urine the day following the operation showed a few hyaline casts; they were not found again until 17 days after the operation.

The examination of the gestation sac was made by Dr F. W. Hall, and showed decidual cells and chorionic villi.

The further history of this case is rather unusual, as it demonstrates how an unfavorable result will occasionally happen many days after a patient is considered to be out of all danger. One piece of the gauze in the cul-de-sac was removed on the fifth day, and the remaining pieces (2) on the seventh day after the operation. We now ordered a low vaginal douche consisting of a pint of a warm ½% carbolic acid solution every morning, and a pint of a 2% permanganate of potassium at night. Immediately after the permanganate douche she complained of pelvic pain, which lasted for a considerable length of time.

The cul-de-sac was irrigated the next day with a warm saturated boric acid douche (one quart). After this also she complained of pelvic pain.

The next day the irrigation was carried out without causing any discomfort of any sort, and after this douche had been given a slight foul-smelling discharge was noticed.

No discomfort followed the irrigation given on the next day.

The irrigations were now discontinued, and the patient felt perfectly comfortable.

On April 3, 10 days after the operation, the temperature rose to 101.8° F., and on the next day the cul-de-sac was again irrigated. Immediately afterwards she complained of severe abdominal pains with nausea. The temperature was 102.5° F.

On April 5, there was a slight foul-smelling vaginal discharge, and after an irrigation the temperature fell to 100.5° F.

On the next day, April 6, 13 days after the operation, she began to have epigastric distress with vomiting of mucus.

The next day she had a chill, and complained of pain in the lower portion of the back, on the left side.

On April 8, she vomited more frequently, the pulse was about 130 to 140, and rather feeble. A very small amount of urine was voided or withdrawn through the catheter.

On April 9, 90 c. c. of urine were voided, and many hyaline casts were found. On April 10, early in the morning 46 c. c. were withdrawn through a catheter. After this no urine was obtained. She died at 10.45 P. M. on April 10, the eighteenth day after the operation. Just before death the temperature went to 105.2° F. and the pulse to 164.

On the day before she died a diffused erythematous rash appeared on the body, and the external layer of skin desquamated in places. On the seventeenth day we opened the lower angle of the incision under nitrous oxide gas and oxygen. The abdomen was not at all distended. There was a small amount of bloody fluid in the abdominal cavity, and the intestines and omentum were slightly adherent to each other. The abdominal cavity was washed out with a warm saline solution, and drainage was instituted by means of gauze sponges.

The autopsy was made by Dr J. H. Hewitt, the resident pathologist, and I am indebted to him for the following notes:

Anatomic diagnosis: "General peritonitis, acute necrosis of kidney epithelium.

The sponges and tapes removed from the abdominal wound have a greenish tint. The omentum is adherent to the wound and to the intestines. There are also adhesions around the left ovary. In the pelvis all the organs are bound together by recent adhesions of a fibrinous character. The appendix is bound down by adhesions and lies behind the cecum.

Kidneys: The cortex is swollen, the blood-vessels are injected, the parenchyma is greyish-white in color and very soft; the pyramids are firm and of a light brownish-red color, and on pressure yield a creamy-white fluid, which is also present in the ureters, the mucosa of the pelvis is injected and shows submucosal ecchymoses. The ureters are unobstructed throughout their course. The peritoneal coat of the uterus is covered with necrotic and gangrenous adhesions. The uterine wall is soft and swollen. The urinary bladder contains a small amount of urine. The wall is soft and is easily torn. The mucosa is soft, edematous, and deeply injected. Coverslips made from the fluid in the peritoneal cavity show the colon bacillus which grew on the ordinary media."

The special points of interest in this case may be enumerated as follows:

(1) Where was the infection atrium? (2) The absence of many of the symptoms that accompany an ordinary pelvic peritonitis following an abdominal operation. (3) The length of time that passed after the operation before the unfavorable symptoms developed.

In this case there was present a localized chronic peritonitis. We carried out vaginal drainage. Did the cul-de-sac douches start afresh an infection which was already present, or did they produce another and quite independent form of fatal infection? The abdominal cavity was never distended as is the general rule in cases of pelvic peritonitis. The total suppression of urine on the seventeenth day following the operation accompanied by vomiting is an unusual complication of an abdominal operation unless the ureters have been tied. The urinary examination before the operation was negative, but immediately following it and again on the seventeenth day hyaline casts were found. Death took place on the eighteenth day after the operation although up to the thirteenth day the convalescence progressed normally.

702 Rose Bldg.

Intussusception of the Jejunum, Report of a Case and Presentation of Specimen

By WILLIAM E. LOWER, M. D.

The reasons for presenting this case of intussusception are: (1) the infrequency of the location, (2) the duration of the condition, (3) the result.

The location of the intussusception, which was in the upper part of the small bowel and as nearly as I could determine in the jejunum, is according to most observers of rather infrequent occurrence. Although my experience with intussusception has not been large, I have probably seen as many as come under the observation of the average general surgeon, and with this exception I have never seen an intussuception at this location.

Three varieties are generally spoken of: (1) the enteric, (2) the ileocecal, (3) the colic. A few cases of intussusception of the duodenum have been reported.

The enteric variety, to which this case belongs, occurs in from 20 to 30% of all cases of intussusception, according to Smith, but many authors think this figure too high. It certainly is greater than has been observed by most of the surgeons of this city. Intussusception of the small intestine is supposed to occur most frequently in adults and is most often observed in the lower end of the ileum. This case was in a child and located in the upper end of the small intestine. Codman's report of 27 hospital cases showed only four of the small intestine.

The ileocecal variety is the most common form and of this no doubt you have all seen a number of cases. Ileocecal invagination occurs most frequently in childhood. At least 70% of cases occurring in children are of that variety.

Age: Dr A. Jacoby says that 25% of all intussusceptions occur in the first half year of life, two-thirds of these between the fourth and sixth month, and 53% of all cases occur before the end of the first year.

The most complete report on intussusception that has appeared recently is that of Clubbe, of Australia, who reports 144 cases, and of these only 14 were over one year of age, and only eight were over two years.

Diagnosis: Codman says that this disease should be almost invariably recognized instead of rarely diagnosed within the first 24 hours. In young children the symptoms are singularly uniform while in adults they are often most varied and a diagnosis has seldom been made until the abdomen is opened. For instance, the classical symptom of blood in the stool was almost always present in children and absent in adults. Differentiation from volvulus presents special difficulty. The absence of bloody, mucoid stools and tenesmus makes diagnosis uncertain. A tumor may occasionally be felt in both conditions, but the mass is generally larger in cases of invagination. Volvulus is generally very rare in quite young children. Differentiation from appendicitis is more readily made. In very young children this is not so common as intussusception and the onset not so violent. Pain becomes progressively worse and does not come at intervals. Vomiting comes on early in appendicitis and fever usually occurs earlier and is much higher than in intussusception. Bloody stools are absent in appendicitis. Tumor in appendicitis is much more sensitive. In Clubbe's series the presence of a tumor was so constant that in only two cases did he open the abdomen without first observing the mass. He says the classical sausage-shaped tumor is not characteristic. In the early cases the mass is more rounded than oblong, and it is seldom that the mass when sausage-shaped is straight.

Treatment: Clubbe does not advocate irrigation as a curative measure, but as a preliminary step in aid to operation. In a series of 144 cases 10% were cured by this alone, the duration being 18 hours. Stone says in spite of the fact that Clubbe's results are the best yet reported, it is still a matter for the individual surgeon to say whether or not he shall use injection as the first stage of the operation, and, if used at all, injection should be as an aid to operation and never as a preliminary measure unless all preparations for immediate laparotomy are completed.

Results: Clubbe's results, from a substantial total of 144 cases, have been the best reported up to this time. Of the 114, 14, or a little under 10%, were reduced by injection alone. Two were moribund when seen and died without operation. Two died during administration of chloroform before operation. This leaves 124 laparotomies. Of these, 84 were cured and 40 died, a mortality below 1/3. Dividing his cases into three groups he had his mortality rate reduced each time. In the first 50 cases 50% died; in the second 50 cases, 24%; in the last 44 cases 12.5%. In the cases which recovered, the average length of time between the onset of the symptoms and the operation was, in the first 50 cases, 28 hours, in the second 50 cases, 23 hours, and in the last 44 cases, 17 hours. Although most of Clubbe's cases were operated upon in the first 24 hours, he has been able to save many cases after 24 hours, and a considerable number after 48 hours.

My report is as follows: The patient was a boy of 12, a Bohemian. His parents, one brother and one sister were well. He had always been a healthy boy, and had never had any digestive disorders or constipation. He never had had typhoid fever.

The family physician, Dr Pav, was not called until the fourth or fifth day of the illness. At the time he saw him (February 11, 1908) the boy was suffering from constant pain in the abdomen and had been vomiting for three days. The attack came on suddenly while he was playing at school but he was able to walk home. Excruciating pain and vomiting followed. On February 10 his bowels moved for the last time without enema. On February 11, when Dr Pav was called, he found the temperature elevated and the abdomen distended, the greatest distension being in the right hypochondriac region. The greatest pain was also referred to this region. An enema of oil was given and 10 drops of tincture of opium. The temperature was 99° in the evening. The patient vomited again during the night. February 12 an enema of oil was given. The temperature was almost normal. The pain was less severe and bloody mucus passed from the bowel. February 13 he vomited fecal matter. Another enema was given and the movement showed bloody mucus. Dr M. A. Albl was called in consultation. Operation was advised. The patient was sent to the hospital and I operated upon the case the same evening. The temperature was 100.5, pulse 120, and respirations 40.

Operation was performed on February 13, the eighth day of the attack. An incision was made along the right border of the rectus about four cm. in length. The appendix was bound down by adhesions. An intussusception of small intestine within small intestine was observed. About eight inches of small intestine was resected. The invaginated portion was gangrenous. The incision was closed in the usual manner. The patient was discharged March 10, perfectly well.

Hip-Disease—A General Survey

By HENRY O. FEISS, Cleveland, O.

Definition: Although every disease of the hip may be characterized as hip-disease, the term usually refers to tuberculosis of the hip, and it is with the so-called tuberculous hip that I wish to deal tonight. It must be stated, however, that even the term "tuberculosis of the hip" is a very loose one. Modern advance in bacteriology and in the use of the Roentgen pictures will undoubtedly further separate this type into a more distinct classification, so that certain kinds of hip-disease, which have been known as tuberculous in the past, will probably go into some other classification in the future. It is too early, however, to make this separation and at present we must be content with the old-fashioned symptom-complex which answers to tuberculous hip-disease.

Morbid Anatomy: In tuberculosis of the hip the characteristic lesion is in the epiphysis of the head of the bone. Occasionally, the acetabulum is first attacked. In either case the acetabulum may enlarge upward, and we have a so-called "migration" of the acetabulum. This is due either to a contraction of the muscles which forces the head against the upper rim of the old socket, so that it gives under the pressure, or it is due to an actual advance of the disease. Instead of the "migration" of the acetabulum there may be a direct dislocation of the head. In such a case a new acetabulum may be formed. This dislocation is probably due to the contraction of spasmodic muscles when the femur is adducted and flexed. In the head of the femur we also have alterations in shape, due both to pressure and to actual disease, and this is easily supposed if we assume diminished resistance in this part of the bone as occasioned by a destructive ostitis. There may be destruction of the entire head or part of the head, or there may be mushrooming. Finally, in some cases we may find ankylosis which may be either fibrous or bony.

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These things are manifest in the skeleton in the later stages, but, of course, certain pathologic changes take place earlier, and let me now briefly run over the course of the disease.

Course: A typical case of hip-disease begins as one or more minute foci near the epiphyseal line. These foci join one another and form a mass of granulation tissue which breaks down at the center. This mass of tissue may either spread or become walled off, but in either case we are almost certain to get a characteristic synovitis in the joint itself, taking place at the same time as the inflammation in the epiphysis: for even before the actual disease in the epiphysis attacks the joint there is an irritation in the capsule and it is this irritation of the capsule membrane which brings on the symptoms—a very important point to remember. The actual disease in the epiphysis may take one of three courses—first, it may become walled off, secondly, it may form an abscess discharging into the tissues about the joint, and thirdly, it may perforate directly into the joint. If the abscess becomes walled off, we have the most favorable termination and in some cases we may perhaps get complete absorption. Discharge into the tissues around the joint is rare because the joint membrane completely surrounds the head of the bone so that, unfortunately, the third termination must be the common one—namely, perforation into the joint itself. As soon as perforation takes place, the cartilage of the head and the acetabulum and the lining membrane of the synovial sac become attacked and we have the marked signs of joint inflammation—namely, exudation, fibrillation and ulceration of the cartilage, pannus formation, the exposure of bare bone and the formation of pus. The capsule becomes thickened by granulation and scar tissues. Of course, these changes are due to the direct inflammation and are not a result of the original synovitis which takes place sympathetically in the joint while the disease is still confined to the epiphysis.

After the disease has perforated into the joint, the contents of the bone abscess together with the fluid formed in the joint cause distension of the capsule and finally the fluid mass finds its exit through the joint as an abscess which may appear externally as a swelling and finally burst. Meanwhile, the bone changes due to the destructive ostitis begin and continue until the actual disfigurations, described above, take place.

The position of the leg with respect to the pelvis also tends to become characteristic. In the first part of the disease, during the stage of synovitis in the joint, we get a little lengthening and abduction but very soon afterwards the characteristic malpositions tend to take place and these characteristic deformities, if not prevented, will become permanent. They are adduction and flexion of the thigh. When this happens the muscles adapt themselves to the new positions and shorten and this is the reason, as I suggested earlier, why we get dislocation backwards: for if the flexors and adductors are shortened and any attempt is made to straighten the mutilated hip the strain must come on the posterior rim so as to produce an actual displacement from the socket.

This is one reason why such malposition must be prevented if possible. Although there is a little lengthening at the beginning, as soon as the destructive process becomes more active there is a distinct and marked shortening of the bone, and, of course, in dislocation, or "migration" of the acetabulum or if changes in the neck occur, we get an elevation of the whole bone as is noted by the position of the trochanter with respect to Nelaton's line. There is another cause for shortening—namely, the occurrence of atrophy in the bone. The full cause of this atrophy is disputed. Part of it is due to disuse. Whether any of it is due to direct changes following the disease cannot be stated. Finally, if no dislocation has taken place we get ankylosis. This, as already stated, may be either bony or fibrous. The joint surfaces having disappeared and the eroded bone ends coming closer together the granulation tissue which forms between them changes to scar tissue, so resulting in fibrous union. If, however, there is a great tendency to deposition of lime salts, we get bony ankylosis, and if the position of flexion and adduction are permitted the bony ankylosis enforces the permanence of these deformities.

Etiology: Next to Pott's disease, which is hardly a joint disease, hip-disease is the most common tuberculous disease of the joints. In most cases it begins in the early years of childhood, but no age is exempt.

Trauma has the same relation to hip-disease as to any other joint lesion. It undoubtedly starts it in many cases, but only as the proximate cause. The remote cause must be the infection in the head of the bone. But the fact that injury is so often referred to in connection with the beginning must have an important bearing on the treatment.

Symptoms: The disease almost always comes on insidiously. The mother states that there had been a fall, following which the child limped. Then the story is that he got better, some days being free from limp and on other days limping in the morning or when he was tired at the end of the day. These symptoms disappeared and then came back, next time being more marked. Then there came a time, when the child was never free from limp. The mother also states that the child has pain. This pain is characteristic. It is not, as a rule, in the hip but is likely to be in the knee. This is important, for when a case comes to you with the history of a limp and pain in the knee, your first thought should be of hip-disease. This pain in the knee may persist all through the course but, presently, pain in the hip and, perhaps, in the entire leg develops and the child refuses to use his leg. Accompanying this pain there is more or less marked sensitiveness on motion. If the pain is little or nothing, the child keeps walking about, but with a steadily increasing limp. Another symptom of hip-disease, occurring at any stage, is that of night cries. Night cries, however, may occur with any joint lesion in childhood and are not characteristic of hip-disease alone.

On examination, we note the limp. This is characteristic. The child walks on the ball of the foot, he keeps his knee bent, and the whole appearance is that of a disinclination to bear the weight of the body on the affected limb. With the knee bent, the hamstring muscles together with the tendo Achillis are partly contracted, thus offering a spring which takes up the jar of motion. So you see that this limp in the early stage is not due to the shortening of the bone, but is a change in the mechanism of the leg to avoid jar. Next, we note the limitation of motion in the affected hip and if the examiner's left hand is placed upon the pelvis so as to touch both the anterior superior spines and the right hand is used to move the leg, it will be noted that the pelvis moves with the leg. In the earlier stage, we find abduction, flexion and lengthening. If we see the case later, we will find the same immovability at the joint and permanent flexion but instead of the abduction we find adduction (as previously stated). The permanent flexion of the hip may be compensated in the spine by a lordosis. By measurements, we will note the atrophy of the thigh and calf as compared with the other leg. There will be tenderness, perhaps, at the joint and there may be swelling and induration. Of course, in the earlier stage the trochanter will not be elevated. An important point in the examination, although it is usually not necessary for diagnosis, is the Roentgen picture. It may or may not show bone changes. It is my firm opinion that the clinical evidence in making the diagnosis will in many cases antedate any finding of the Roentgen pictures, unless the process is very acute and has a special tendency to bone destruction. Perhaps the earliest changes that the

Roentgen picture shows are the cloudiness over the joint edges and the consequent blurring of outlines. But if we have the symptoms and signs of hip-disease and the Roentgen picture is negative, by all means treat as hip-disease. Of course, as the disease advances the diagnosis becomes plainer. When abscesses appear and break on the outside they form characteristic sinuses with which you are all acquainted. Elevation of temperature is not always present and when it occurs it is somewhat irregular, rising, of course, in the evening. The diagnostic signs are spasm, limp, malposition, atrophy and shortening.

Differential diagnosis: We must differentiate from Pott's disease, synovitis of the hip, infantile paralysis, congenital dislocation, coxa vara, osteomyelitis, osteoarthritis, infectious arthritis and hysterical attitude of the hip.

Pott's disease is the most important disease which must be differentiated, because it is the one in which the most errors are made. We sometimes find in dorsal or lumbar Pott's disease that the hip is drawn up on account of spasm in the psoas muscle. The chief diagnostic sign is stiffness in the back. Moreover, we find that if the flexion of the hip is due to hip-disease, all the motions are limited. In Pott's disease it is chiefly hyperextension that is limited. Besides changes in the knee-jerks would point to Pott's disease. The Roentgen picture would be of great importance.

Synovitis of the hip cannot be distinguished from early hip-disease because it almost always occurs in hip-disease. Such cases must be treated as hip-disease at least for a period, and it is always wise to see the case every week after treatment stops in order to be on the safe side.

Infantile paralysis may be distinguished by the loss of reflexes, by the greater atrophy, by coldness and the loss of power in the limb, but in the very early stage it may have acute symptoms in the hip simulating hip-disease. Simply watch the case and the diagnosis will soon be apparent.

Congenital dislocation: In this the history is that the child has been lame ever since it began to walk. The gait is characteristic. Examination shows the head out of its usual position and no limitation of motion.

Coxa vara: Both this and the congenital dislocation can be made out by Roentgen pictures. Remember that in coxa vara the limitation of motion is in abduction.

Osteomyelitis of the hip rarely occurs in the joint itself. The constitutional signs are acute and very sudden. The treatment of course is the same as in hip-disease.

Arthritis of the hip comes usually in adult life. The limitation of motion is due both to muscular spasm and to mechanical interference, for osseous deposits form on the joint edges. If it is of an infectious type other joints are involved in most cases. There is usually in the osteoarthritis very little shortening and, of course, no abscess.

Hysterical affections of the hip are impossible to differentiate in the early stage and we may get muscular spasm and atrophy. The only thing is that the apparent discomfort is quite out of proportion to the signs.

Prognosis (*As to life*): If death occurs directly, it is usually due to the effects of suppuration. The immediate causes of death are in many cases tuberculous disease of the lungs or the meninges, kidney disease and amyloid degeneration. There may also be septicemia and pyemia.

Prognosis (*As to function*): This depends very much upon the treatment. If fixation is carried out early and the destructive process is not marked, the patient regains all motion and without shortening, but, as a rule, the disease is one which tends to recovery with more or less deformity and shortening. A favorable result is when ankylosis takes place with the leg in a fairly straight position. Then the patient walks without much limp and sits down by means of compensation of the lumbar spine. A little permanent flexion is a good thing. Adduction is bad because it makes the shortening seem worse than it really is.

Treatment: Indications for treatment are the direct and logical deductions from the observation of the disease. I have pointed out that trauma is a common event in the onset. I have pointed out that the child with beginning hip-disease tries to avoid the jar of motion; so the first indication is, of course, to protect the leg in order to diminish the irritation due to motion and weight-bearing. The second indication, as deduced from the pathology and the physical signs, is that the leg tends to draw up into a position which is bad for function and we ought to fix the joint so that this drawing up cannot take place. We have therefore protection and fixation. Thirdly, it is seen on close observation, that if it is possible to diminish the spasm of the muscles, the pain diminishes. This is accomplished by stretching the muscles around the joint, and traction to keep the joint ends from touching seems to be indicated. Most authorities agree on the fixation and the protection, the good of traction is disputed. Certainly, it does no harm. Personally, I believe that in all such doubtful questions it is wiser to err upon the safe side, and as results with the traction treatment have seemed good, I favor that method.

A child with beginning hip-disease is taken care of somewhat as follows: He is placed on a flat, hard bed or on a Bradford frame and a weight and pulley such as you are acquainted with is applied by means of adhesive plaster straps. In the country this can be easily carried out. The child having been placed in the bed, some webbing straps are sewed to the adhesive. This is fastened to the leg and a weight of five to 10 pounds is attached to the webbing straps by means of a cord which hangs over the foot of the bed and rides on a pulley. To keep the child in bed, a swathe may be tied under his shoulders and around his body and fastened to the bed posts, or a large soft bandage can be applied to the head of the bed so as to go under the perineum. Counter pull is furnished if the foot of the bed is raised. The child is now carefully observed, and at the end of a few weeks may be ready for ambulatory treatment. The best treatment that I know of is a traction splint, as first used by Taylor, but there are other things which are practically as good. The hip can be placed in plaster and a high shoe can be placed on the other leg, then the child is given crutches. A simple splint which can be used for a child in the country is the Thomas hip-splint which consists of a longitudinal bar of iron running down the back and the leg in question and held to the body and leg by means of cross-bars, which, being made of soft iron, can be bent according to the shape of the patient. Crutches and a high shoe are used in connection with this brace. In each of these three methods, fixation and protection are the principal things. I should insist upon the removal of weight-bearing. I should insist upon the maintenance of the joint in a good position, but I would not insist upon the traction.

Convalescent stage: If a child is treated by the plaster method, the convalescent treatment must consist in carrying out the measures used in the acute stage and the plaster of Paris dressing must be continued. Perhaps, after a year, if the child has done well, the high shoe and crutches can be left off, but not the fixation. If the child is treated by the Thomas splint method, it may be best to continue the crutches and high shoe longer, perhaps until the end of the disease. In the traction splint method, the splint is to be changed from a traction splint to a convalescent splint, and then the high shoe may be left off or shortened. The length of fixation treatment is to be at least two years.

Hygienic measures: Just as essential as the fixation and protection is the careful regard to the general condition of the child, and it must be treated as tuberculous just as if it were a case of tuberculosis of the lungs. Fresh air must be insisted upon. The child is to sleep out of doors whenever it is possible, or perhaps, with the window wide open at night in the cooler weather. Moreover, the food must be nourishing. Cod liver oil, good milk, eggs and other healthy food must be enforced. Without such measures the mechanical treatment can be of little avail as will readily be understood by anyone who has dealt with tuberculosis.

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EDITORIAL

Meeting of the American Academy of Ophthalmology and Oto-Laryngology

The Thirteenth annual meeting of this Society, which was held at the Hollenden Hotel in this city on August 27, 28 and 29, proved most successful. The accommodations and the courteous treatment by the hotel management was all that could be desired. The attendance was very good, about 150 of the 500 members from all parts of the country being present. Over 100 new members were elected at this meeting, which makes the Society one of the largest devoted to these specialties in the world. Practically all the papers upon the lengthy program were read and, as the time was limited the discussion of them was necessarily not so full as might be desired. This drawback, however, is usual when so many papers have to be presented and could be obviated only by lengthening the duration of the meeting. It would seem from the wealth of material offered and the limited time for its assimilation that in the future it would be advisable to adopt the European plan of holding but one session daily, and that it would be justifiable to extend the limit from three to six days. This would permit of more free discussion not only upon the floor at the meetings but also at the informal gatherings of members at other places and on other occasions. The time of the members was fully occupied, there being two sessions daily, one in the morning, the other in the afternoon. Besides these, there were numerous luncheons, dinners, receptions and hospital clinics to fill in the remaining time.

Most of the members remained over for the clinics, which were held at Lakeside, St. Vincent's and St. Alexis Hospitals. The attendance at these was unusually good. The local committee on arrangements and the profession did their utmost to entertain the visiting members and to make their visit pleasant from a social standpoint as well as valuable in a scientific way. The Ophthalmological and Oto-Laryngological Section of the Academy of Medicine of Cleveland, on Friday evening gave a dinner at the Euclid Club, followed by a musicale and informal dance. The ladies were taken to the Country Club in automobiles and entertained at luncheon on Friday afternoon and on Thursday evening they were taken to the Garden Theatre. A reception was also held at the Union Club on Thursday evening.

The guest of the Ophthalmological Section was Mr. J. B. Lawford, of London, England, who delivered a most interesting and epoch-making address upon the Etiology of Choroiditis. Dr. Henry Gradle, of Chicago, the guest of the Oto-Laryngological Section, gave an excellent paper upon the Distant Effect of Anomalies of the Upper Air Passages. For the ensuing year, Dr. Otto J. Stein, who for some years had been treasurer, was elected president. Dr. Percy H. Friedenberg, of New York, was elected first vice-president, and Dr. Secord Large, of this city, treasurer. Dr. Geo. F. Suker, of Chicago, was re-elected secretary.

Arsenic in Syphilis

The use of arsenical preparations in the treatment of syphilis suggests itself from the beneficial results obtained with "atoxyl" in cases of sleeping sickness which, like syphilis, is a protozoan diease. Lambkin, in the *British Medical Journal* for August 15, gives some interesting results in handling a large number of patients with syphilis in a military hospital in which, presumably, the opportunities for close observation and control of the patients would be most satisfactory.

At first the preparation known as atoxyl was used with uniformly good results. No toxic effects from it were seen, but reports from the ill-effects of the drug in the hands of other clinicians were noted with increasing frequency. When first introduced the drug was apparently not especially toxic, and these later mishaps were believed to be due to the large demand for it and the consequent flooding of the market with either adulterated or badly made preparations. These facts led to the employment of a somewhat similar arylarsonate known as "soamin," the preparation of which was more under control. In many respects this latter seemed preferable to the atoxyl, especially in being more rapid in its action.

The administration of either of these substances should be by intramuscular or subcutaneous injection since they are decomposed by the gastric juice and may thus lead to toxic results. They are soluble in water and can be boiled to ensure sterilization. They should not be given coincidentally with mercury since the latter leads to their dissociation and the consequent danger of arsenical poisoning. The results of the treatment in some 65 cases was apparently most satisfactory and seemed to show that if used early and in sufficient quantities the arylarsonates will prove prophylactic in the majority of cases against any further development of the disease. They seem to delay and modify markedly the secondary symptoms and exercise a particularly beneficial effect in secondary ulceration. The question as to whether the treatment will prove as efficacious as that by mercury, or better than it, remains to be seen, but the possession of an additional drug for the cure of syphilis is most important, especially for those cases that do not respond readily to mercury.

In this connection the employment of quinin in syphilis is worthy of mention. Lenzmann, in the *Deutsche Medicinische Wochenschrift,* No. 10, 1908, found that the intravenous injection of muriate of quinin in doses of 0.3 to 0.6 gram gave very satisfactory results in the treatment of syphilis, even in those cases in which the injection of mercurial preparations had proved useless.

Trained Anesthetists

The practice to relegating to one of the junior house officers of a hospital, the important duty of administering general anesthetics, is an established custom which was denounced by J. M. Baldy in the president's address before the American Gynecological Society. He declares that it is the shame of modern surgery and a disgrace to a learned profession and he urges most strongly the appointment of expert anesthetists, who should receive sufficient salary to make such a position attractive. Women, he believes, could fill these positions admirably and on account of their having, as a rule, less ambition to do surgical work themselves, they would be content to limit their activities to this class of work.

The responsibility of the anesthetist is secondary only to that of the operator. The latter cannot be expected to keep a close watch upon the condition of the patient, as his whole attention must be concentrated upon what he himself is doing. His peace of mind and his ability to do good work will be more readily interfered with by the unsatisfactory administration of the anesthetic than by almost any other complication during the operation.

The giving of anesthetics is one of the valuable items of training that the hospital interne receives and it would not be fair to deprive him of this privilege, but as a rule the interne receives but scant instruction at the hands of a more experienced man or sufficient oversight in the first cases that he is called upon to anesthetize. Some of his early cases may be particularly bad subjects for anesthesia or they may have to undergo extensive or dangerous operations. With a trained anesthetist upon the staff of the hospital the internes would receive this instruction and in the case of dangerous operations the expert could himself give the anesthetic. In a large hospital several operations may be proceeding simultaneously, so that a single trained anesthetist could not possibly attend to them all, and the internes would then have their opportunity. Any one who has had much experience in operative work will bear witness to the great variation in different men as regards their ability to administer anesthetics. In fact, it seems to be not only a matter of training but to some extent a natural gift. Some hospitals have already adopted the plan outlined above and it is certainly a point worthy of imitation by those that have not done so.

Common Pleas and Probate Judges

All physicians in behalf of good citizenship should take an active non-partisan interest in the election of suitable men to the various civic offices, especially those of our city and county. There will be four judges elected to the Common Pleas Bench and one for the Probate Court. As the medical profession often comes in contact with the judiciary, we have an especial interest in seeing that good men are selected at the primaries and elected. Judges Hadden, Lawrence and Estep should be returned to their respective benches as men tried and not found wanting. The past records of the other candidates who have not already proved their capability by occupying these offices should be most carefully scrutinized before the votes of the profession are cast.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Sodium Salicylate: In the *Medical Review of Reviews* for June, Mozart Monae Lesser treats of the value of sodium salicylate as an adjunct to surgical cases, its effects being positive, if not startling. Aside from the diseases generally known to be benefited by salicylate of soda, we find an action not noted by many authors, but well explained by clinical facts. He believes that this remedy is of extraordinary value as a sedative in traumata and the inflammations connected with them. As soon as normal doses of salicylate have been absorbed and taken into the circulation there is noticed a relaxation of the vessels and tissues in general, and every form of pressure is diminished to a corresponding degree. Most notable is the change which may be found in a pelvic or perityphlitic abscess. Here we can readily notice a lessening of the tension of the walls, a gradual relaxation of the tissues and consequent lessening of absorption of septic material, as shown by the fall of temperature and diminution of pain. So excellent were the results obtained by salicylate as a preoperative procedure that it was made a rule to first treat with salicylate of soda every case of peritonitis, whether originating in the gall-bladder, the appendix or the pelvic organs, and only in case of severe pain was it preceded by one dose of codein. The relief afforded was so universal that it very seldom was necessary to operate in the acute stages of perityphlitis or salpingitis, especially the latter, and the ice-bag was entirely dispensed with. In painful endometritis and often in painful menstruation the efficiency of the salicylate is demonstrated. In renal and biliary calculi one can often observe the free passage of small stones after three or four one gram doses of this drug have been given at two-hour intervals. It evidently relaxes the channels and aids the passage of the stones, but the pain in such cases is often so great that a special anodyne may also be needed. The drug is of decided value in cystitis of all forms and inflammatory conditions of the prostate gland, also in orchitis and epididymo-orchitis. The relief afforded in these cases is certain. In acute septic cellulitis of the extremities extending upward, it will often surprise the physician to see the progress of the disease slowly but effectually checked, the inflammation becoming gradually localized, and the constitutional effect proportionately diminishing by the administration of salicylate of soda. If the surgeon is not too hasty and will not expect a too rapid result, the use of the drug will render the work of the scalpel far safer and more simple. In fact, in every form of trauma much relief is afforded by its use without the disadvantages caused by opiates and other sedatives. The tinnitus aurium produced by this drug is an indication to discontinue it for the time being. Furthermore, it must be administered to nursing mothers in small quantities only, as the mammae secrete large quantities of it, and several cases of purpura in the nursing infant have been observed after the administration of sodium salicylate to the mother. He emphasizes the fact, that the sedative effect of salicylates does not depend upon a central hypnotic action, but upon its power to relieve tension, relaxing the tissues and allowing a freer circulation.

Scarlet Fever: Louis Fischer, in the *International Clinics* (Vol. II, Series 18) states, as to antipyretic drugs in scarlet fever, that antipyrin, phenacetin and quinin are entirely out of place, owing to their depressing effect. They are contraindicated and should never be given. Tincture of aconite in one minim doses (formula U. S. P. 1890) may be given and repeated once every three hours for an infant one year old. For older children, one minim every two hours may be administered as an antipyretic. Persistent fever during the course of scarlet fever means the presence of complications. If a temperature behaves normally it drops by lysis. If it suddenly rises then a complication should be looked for, although the temperature alone should not be the only criterion by which we can exclude a complication. Regardless of the presence of diphtheria, every case of scarlet fever should in the early stages be injected with 1000 or 2000 units of antitoxin. This is to be given as a prophylaxis against the development of diphtheria. He has found that this complication is greatly lessened by such preventive treatment. If the Klebs-Loeffler bacilli are found then the treatment for diphtheria must be given regardless of the presence of scarlet fever. The nasopharynx should be cleansed to wash away exfoliated or loose necrotic membrane and for this he prefers a one-half percent permanganate solution or the normal salt solution. To wash the tonsils or pharynx he has used a siphon of seltzer water with a rubber tube attached. In swollen cervical glands he advises in the beginning the application of the compound iodin ointment for several minutes several times a day. An ice-bag may be applied for an hour or two, followed by a hot flaxseed poultice, and then by warm fomentations, thus aiding resolution of the swollen lymphatics. He emphasizes the fact that pus may be present in spite of a normal temperature, and in such instances places stress upon the differential blood-count, a marked leukocytosis with a polymorphonuclear percentage of 80 or over, indicating a probable suppurative condition.

Cerebrospinal Meningitis: Charles Hunter Dunn, in the *Journal A. M. A.*, for July 4, concludes as to the use of serum treatment in epidemic cerebrospinal meningitis that (1) The use of the Flexner antiserum is of great value in epidemic cerebrospinal meningitis. He believes its value to be comparable to that of diphtheria antitoxin in diphtheria. (2) The use of serum at times aborts the disease, frequently rapidly relieves its symptoms, shortens its course, lessens the liability to sequelae, and greatly reduces its mortality. (3) The serum should be used as early as possible in all cases, even of suspected epidemic meningitis. (4) It should be frequently repeated as long as there are symptoms or any tendency to relapse. (5) Late chronic cases are unfavorable for the use of the serum, but in any case in which the diplococci are present there is some hope of relief by its use. (6) Some cases are resistant. In the same number, Frank Spooner Churchill believes that enough has already been done by the serum to warrant its use on a wide scale and that, given a case suspected to be meningitis, it is our duty to do a lumbar puncture and if we get a cloudy fluid to inject the serum at once, repeating it if the case proves meningococcic.

Opsonic Treatment: In the *New York Medical Journal* for June 27, G. Morton Illman and Harry A. Duncan state that the number of diseases in which opsonic treatment is curative or beneficial is already large but the present indications are that opsonic work will not only be used more and more extensively in the treatment of disease but also in the diagnosis, as is now seen in the treatment and diagnosis of tuberculous conditions. They conclude that vaccine therapy offers a chance of cure in many cases of disease, heretofore regarded as incurable. That in the large majority of cases stock vaccines are just as efficient as autogenous vaccines. That cases can be treated with fewer actual index observations than was at first supposed. That cases treated with the clinical phenomena alone as a guide should be so treated only by some one well versed in vaccine therapy and then only after having been under previous observation for a period long enough to have determined "the phase" the patient is in. That very small initial doses should be employed when the opsonic index has not been previously determined. That the best results at the present time are obtained in tuberculous conditions and staphylococcic or streptococcic infections, as in acne, etc. That to get the best results vaccine treatment must be instituted as soon as the diagnosis is made. In the *Journal A. M. A.* (from the *Practioner*), July 4, Greenwood considers how far the "opsonic index" is a trustworthy guide in diagnosis and treatment, and this must not be confounded with the question of therapeutic inoculations as curative or prophylactic methods. He concludes that there is no valid evidence that the limits of error do not exceed 20% of the mean value. Wells, from observations on newborn babies, concludes that a low opsonic index is not diagnostic in children under one year old. In infants a low opsonic index is not inconsistent with health and the child may be thriving well with a declining index. When the opsonic index is low it will rise in response to the stimulus of an inoculation with bacterial vaccine. The antibacterial defense in children cannot depend on the opsonic content of the serum.

Heart Disease: In the *Medical Record* for July 11, Hobart A. Hare deals with the heart muscle changes in various diseases. Not rarely patients present themselves with symptoms which are not distinctly cardiac, and only careful heart study shows that the general impairment of mental and physical energy is dependent upon a poor circulation. The pulse is small and feeble, the tension unduly low, and the heart sounds poorly accentuated. The condition giving rise to this state is usually an excess of nerve exhausting work, or an illness which has sapped the vitality of the patient. Closely associated with this class of patients is that class who suffer from prolonged feebleness of the heart after an attack of true influenzal infection. What the exact changes in the heart are under these circumstances has not been determined, but suffering from faintness and precordial distress is common. The patients are pallid and relaxed and really need rest and hydrotherapeutic measures more than the internal use of drugs. He has often been surprised how little attention is paid to the feeble heart of tuberculosis. The condition of the heart as the result of overstrain he divides into three parts. The condition immediately after acute overstrain, the condition after chronic overstrain and the final condition often met months or years after these types of strain had passed away. It is remarkable how often we meet with hearts which are distinctly damaged by nervous worry. The victims of great mental strain not rarely have developed actual organic and degenerative changes in the heart muscle and blood-vessels, and he refers to the case of the late Dr Pepper as in this class. There is no doubt that one cause of this lies in the great increase in heart action required by mental effort, accompanied as it is by nervous waste, without the compensation of long periods of rest, of outdoor exercise, and of fresh air.

Atropin: H. Vaquez, in the *Medical Record* for July 4 *(La Tribune Medicale)*, asserts that the careful study of arrhythmia enables us to detect in most cases a nervous origin for the trouble, in others a muscular origin. In case of nervous origin there is an entire pause in the beats, while in the muscular affections auscultation, and the comparative study of the tracings of the radial and jugular show a slowing of the beat which only affects the ventricle, the auricular contraction producing a systole like an echo of the ventricular contraction. In a healthy man atropin accelerates the beats of the heart. When the pulse is slowed by disease atropin will cause a paralysis of the terminal filaments of the pneumogastric in the cardiac muscle, and the beats become quickened. In bradycardia caused by organic muscular lesion the effect of atropin is nil. The rhythm is not modified at all. The author presents a case in which atropin showed the purely nervous origin of the trouble, the slowing having shown itself in the course of an appendicits.

Roentgen Rays: In the *Therapeutic Gazette* for July, G. E. Pfahler formulates his conclusions as to the treatment of sarcoma by means of the Roentgen rays. (1) The method of selection in operable cases is subcapsular excision or enucleation, followed by a course of Roentgen ray treatment. (2) The number of treatments necessary will vary with each particular case, a fair average would be about 20. (3) In inoperable cases, or in patients who refuse operation, the

Roentgen ray offers undoubtedly the greatest chance of recovery, 25% to 35%. (4) When the progress under treatment is slow he believes it should be supplemented by the Coley toxins. (5) Finally, good technic is as essential to good results in this work as in any other special field. In the same Journal, Charles Lester Leonard believes that in authentic cases of inoperable sarcoma and carcinoma, the palliation under Roentgen ray treatment has amounted to practical cure. This is particularly true of cases of sarcoma in which the increased danger of metastasis following operation is well known, and in which it has been shown that Roentgen treatment is more effective if there has been no previous operative intervention. Theoretically, the Roentgen treatment is valuable as a palliative agent not only because it destroys the diseased cells and increases the resistance of normal cells *in loco,* but also because it converts the lymph channels into fibrous cords and prevents metastases, as has been shown by operations after Roentgen treatment. It is also highly probable that the toxins produced by the destruction of the malignant cells stimulate the protective activities of the body and the formation of large quantities of antibodies or autogenous antitoxins. The value of the combined toxins in the treatment of sarcoma has been demonstrated beyond doubt. The adrenals, the thyroid, and the thymus glands have each shown some value as palliatives in the treatment of malignancy. Each would seem to have its sphere of application, but when better understood they will be employed in conjuction with other methods with greater efficiency.

Antipyresis: In the *Journal A. M. A.* for June 20 *(Therap. Monats.),* Staehelin describes experiments which confirm the assumption that fever may be useful for the infected organism. In acute affections the fever may be left unmolested. The question is not the height of the temperature, but the other symptoms. Physical and medicinal measures are both useful if antipyresis is required. Hydriatic treatment is always indicated when there is danger from the cerebral disturbances, when the somnolent patient is not breathing correctly, when there is danger of bronchitis and atelectasis and when nourishment is interfered with by brain disturbances. These dangers are most imminent in typhoid. To be sure, he says, we no longer give baths at 60° F., we do not give baths so often, and we no longer accept the thermometer as the sole criterion of the effect of the bath. The bath may have accomplished its purpose without having reduced the temperature materially. The best bath is that which withdraws only a little heat, being at most 15 or 18 degrees colder than the body of the patient, with no cold douches of the trunk. The influence on the circulation, nervous system and respiration is at least as good as with more heroic procedures, while the influence on the general condition and appetite is much better. Antipyresis with cool packs, and similar measures if it occurs at all, is entirely subordinate to their stimulating action. Abundant nourishment is not harmful in fever, he reiterates, both clinical experience and experimental research confirm the fact that abundant nourishment renders the course of infectious disease much more favorable. The main point is to supply large amounts of calories: not albumin in particular. He concludes with the statement that the facts learned from experimental research not only explain what fever really is, but they show how to treat febrile patients, and practical experience is confirming the importance of the principles thus learned. They justify measures for antipyresis, while at the same time protesting against overrating them.

Cardiovascular Disease: In the June number of the *Monthly Cyclopaedia and Medical Bulletin,* Frederick P. Henry treats of our resources in the symptomatic treatment of angina pectoris. The element of spasm in these cases may be promptly overcome by the nitrite of amyl, the nitrite of sodium, and nitroglycerin. In the milder attacks of angina relief may be promptly obtained by the inhalation of amyl nitrite, or the hypodermic injection of nitroglycerin. The nitrite of sodium is given per os and is slower in action. In the severer forms of angina, however, nothing but the hypodermic administration of morphin, always associated with atropin, will suffice to relieve the excruciating pain. The use of morphin should not be delayed, for the pain in itself may be fatal. The effect of the nitrites is evanescent, but of the three the action of nitroglycerin is most permanent. In addition to the nitrites, the theobromin preparations strongly recommended by von Noorden in stenocardia are well worthy of trial. The best known is diuretin, in doses of 0.5 to 0.6 grams thrice daily. He has derived signal success in angina from aconite. With two or three drop doses of the tincture he has seen marked mitigation of the frequency and severity of the attacks. It is best given combined with sweet spirits of niter.

Book Reviews

The Ready-Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M. D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. Sixth edition. 12mo., 737 pages, with 99 engravings and 4 plates, in colors, and monochrome. Cloth, $3.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

This edition is somewhat larger than the previous ones and shows several improvements over them. The text has been, in many cases, revised and brought up-to-date. Many new articles have been added, also several colored plates and photographs. Radiotherapy, phototherapy, vaccine-therapy, high frequency currents, liquid air, carbon dioxide, and the newer remedies are discussed in a brief manner. This volume is peculiarly adapted to students and general practitioners.

Reference and Dose Book. By C. Henri Leonard, A. M., M. D., Emeritus Professor of Gynaecology in the Detroit College of Medicine. New and enlarged edition; 40th thousand. Cloth, limp sides, round corners, thin paper, 16mo., 145 pages; price 75 cents. The Illustrated Medical Journal Company, Publishers, Detroit, Mich.

A very convenient pocket edition containing a large amount of valuable information which is apt to be required in emergencies. The recent changes in the pharmacopoeia have been arranged in two groupings namely, those of increased and those of decreased strength. A therapeutic index for diseases and various tables complete the book.

The Practical Medicine Series, comprising ten volumes on the year's progress in medicine and surgery, under the general editorial charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume II, General Surgery, edited by John B. Murphy, A. M., M. D., LL. D., Professor of Surgery in Rush Medical College (in affiliation with the University of Chicago). Series 1908. Chicago. The Year Book Publishers, 40 Dearborn Street.

The present volume gives a most satisfactory review of the important contributions to surgical literature for the past year. As the author points out the limits of such a work forbid a complete summary but the most representative articles have been abstracted so as to enable one to obtain a very good idea of what has been accomplished recently without the expenditure of time necessary to read the original articles. Dealing with every phase of surgical work as this book does, it is difficult to select any special subjects for particular mention but the book can be heartily recommended as a means of obtaining a concise summary of the latest additions to surgical topics.

The Sexual Question, a scientific, psychological, hygienic and sociological study for the cultured classes, by August Forel, M. D., Ph. D., LL. D. Translated by C. F. Marshall, M. D., F. R. C. S., and published by Rebman Company, 1123 Broadway, New York.

Dr Forel was formerly Professor of Psychiatry at and Director of the Insane Asylum in Zurich (Switzerland). He says in the introduction "My object is to study the sexual question under all its aspects: scientific, ethnological, pathological and social, and to seek the best solution of the numerous problems connected with it. My opinions on the sexual question are based, on the one hand, on my scientific study of the human brain, and on the other hand on the long personal experience of an alienist who has devoted himself almost as much to normal mentality and questions of social hygiene as to pathological mentality. I have, however, been obliged to rely on the fundamental work of Westermarck with regard to ethnology, this subject being strange to me. Concerning sexual psychopathology I have followed the classification of Krafft-Ebing."

The author states in his preface to the second edition that he placed the book in the hands of a young girl, aged 21 years, intelligent, virtuous, educated, and well brought up, but without restraint. He requested her to tell him frankly: (1) If in her opinion he had been mistaken in his judgment of the sexual psychology of the normal young girl; (2) If his book had done her the least harm moral or otherwise.

This young girl has written a very charming and remarkable letter in which in part she says: "My first impression was that of disgust for all human beings and mistrust of everything. But I was soon glad to find that I was a very normal young girl, so that this impression passed away. * * * I am always rejoiced, in reading your book, to see with what truth you describe our sexual impressions. Those who maintain that we feel in this way the same as men make me smile. In your book ("Hygiene of Marriage," p. 479) you say that the idea of marriage awakens in a normal young girl a kind of anguish and disgust, and that this feeling disappears as soon as she has found some one whom she loves. This is extremely true and well observed. * * * We should prefer to see children come into the world by some other way than that ordained by Nature. * * * When I had finished reading your book I became absolutely tranquil, and my ideas were enlightened. It goes without saying that it is no longer possible for me to be ingenuous, but I should like to know what one gains by such *naïveté*. It is very easy to be innocent when one knows nothing, and this is of no account. I never thought for a moment to find your book immoral, and that is why I do not think that you have done me any harm."

In the opinion of the reviewer the book is not immoral because it condemns and pictures the horrors of sexual abuses and abnormalities, but yet it is not a book that should be read by anyone not taking it up from a scientific standpoint. The title of the book is unfortunately one that will attract the morbidly curious on sexual matters. In a work intended for the laity it would have been better to have treated the subject only from a biological, physiological and sociological point of view thus leaving out the pathological side with its disgusting pictures of the detailed *modus operandi* of how the sexual pervert, by practising masturbation, sadism, masochism, fetichism, exhibitionism, homosexual love, sexual inversion, pederosis, sodomy, etc., secures his or her sexual gratification and pleasure. As Pope has well said: "Vice is a monster of so frightful mien as to be hated needs but to be seen; yet seen too oft, familiar with her face, we first endure, then pity, then embrace." There are probably characters with weak wills or psychopathic tendencies who might be taught by such a book horrible means of gratifying their sexual desires without the dangers and responsibilities associated with normal intercourse in the unmarried or even the married.

The author deals very thoroughly with the physiology of reproduction and with heredity. He is very enthusiastic about Richard Semon's recent work based on an idea of the physiologist, E. Hering, which looks upon instinct as a kind of memory of the species which he calls the "Mneme" and which appears to throw a new light on the question of transformation and heredity.

In speaking of sexual morality the author says that from a Protestant point of view it is immoral to burden one's wife with continual pregnancies, while from the Catholic point of view it is immoral to interfere with these pregnancies by preventive measures. The author, however, believes in preventing conception under certain circumstances and details various methods of preventing impregnation. He thinks that those who would continuously prevent conception by knowing these methods would be abnormal in not having the desire for offspring and thus the race would be benefited by the death of this strain of egoists.

Dr Forel gives as his commandment of sexual morality: "*Thou shalt do no harm willingly to any person, nor to humanity, by thy sexual appetite or acts, and thou shalt do thy utmost to promote the happiness of thy neighbor and the welfare of society.*"

The author gives as his *résumé* of the matter contained in the chapters of this book:

(1) In the first five chapters I have given an account of the natural history, anatomy and functions of the reproductive organs, and the psychology of sexual life.

(2) In Chapter VI, I have given (chiefly according to Westermarck) a résumé of enthnography and the history of sexual relations in the different human races.

(3) In Chapter VII, I have attempted to trace the zoölogical evolution of the sexual life along the line of our animal ancestors, and to briefly describe the evolution of the sexual life in the individual, from birth till death. I have thus endeavored to acquaint the reader with the two sources of our sexual sensations and sentiments—the hereditary or phylogenetic source, and the source acquired and adapted by the individual.

(4) In Chapter VIII, I have described the pathology of the sexual life, because this concerns social life much more than is generally supposed.

(5) In Chapters IX to XVIII, I have explained the relation of the sexual to the most important spheres of human sentiments and interests, to suggestion, money and property, to the external conditions of life, to religion, law, medicine, morality, politics, political economy, pedagogy and art. Incidentally, I have glanced at the social organizations and customs which depend on these relations.

A Text-book of Surgical Anatomy. By William Francis Campbell, M. D., Professor of Anatomy at the Long Island College Hospital. Octavo of 675 pages, with 319 original illustrations. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, $5.00 net; Half Morocco, $6.50 net.

The author emphasizes the fact that the study of anatomy from a purely anatomic standpoint is difficult and bound to be lacking in interest unless at the same time the practical application of anatomic relations in diagnosis and surgical work are pointed out. In the preface he says "Anatomic facts are dry only as they are isolated. Translated into their clinical values they are clothed with living interest." With this end in view a very satisfactory work has been compiled embodying the leading anatomic points of clinical importance in the different regions of the body. The book is not intended for a complete treatise of anatomy but read in connection with a textbook of anatomy it will prove of decided value in drawing the attention of the student to the important facts to be remembered. The illustrations are numerous and good, an invaluable consideration in a work of this kind.

Acknowledgements

Pulmonary Tuberculosis and All Complications, by Sherman G. Bonney, M. D. W. B. Saunders Company.

Medical Gynecology, by S. Wyllis Bandler, M. D. W. B. Saunders Company.

The Ready-Reference Handbook of Diseases of the Skin, by George Thomas Jackson, M. D. Lea & Febiger Company.

The Principals of Pathology, Volume I, General Pathology, by J. George Adami, M. A., M. D. Lea & Febiger Company.

Industrial and Personal Hygiene, by George M. Kobler, M. D., LL. D. Report of Committee on Social Betterment of the President's House Commission.

A Treatise on the Principles and Practice of Gynecology, by E. C. Dudley, A. M., M. D. Lea & Febiger Company.

Reference and Dose Book, by C. Henri Leonard, A. M., M. D., The Illustrated Medical Journal Company, Detroit, Mich.

Medical News

New books in the Cleveland Medical Library.

Young, Jas. K., Manual and Atlas of Orthopedic Surgery.
Ferguson, A. H., Modern Operations for Hernia.
Whiting, Frederick, The Modern Mastoid Operation.
Kelly and Noble, Gynecology and Abdominal Surgery, Vol. 1.
Schmidt, Rudolph, Pain: Its Causation and Diagnostic Significance.
Moynihan, B. G. A., Abdominal Operations.
Hoffa, Albert, Orthopädische Chirurgie.
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Croftan, A. C., Clinical Therapeutics.
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Kerley, Chas. G., Diseases of Children.
Kelly, Howard A., Medical Gynecology.
Janet, Pierre, The Major Symptoms of Hysteria.
Shaw, E. R., School Hygiene.
Power and Murphy, A System of Syphilis, Vol. 1.
Sajous, Chas. E. de M., The Internal Secretions.
Poirier, Cuneo and Delamere, The Lymphatics.

Le Dentu et Delbet, Nouveau Traité de Chirurgie. This is to be published in 33 parts, the following have been received: Hernies, Maladies Chirurgicales de la Peau, Maladies des Os, Lésions Traumatiques des Articulations, Muscles, Aponévroses, Tendons, Tissus Përitendineux, Maladies de L'Oeil, Corps Thyroide, Goitres, Cancers Thyroïdiens, Traumatismes, Infections, Troubles Vasculaires et Trophiques, Arthrites Tuberculeuses.

Verhandlungen des Vereins Süddeutscher Laryngologen, 1894-1907.

NEW SYDENHAM SOCIETY PUBLICATIONS.

Cohnheim's Lectures on General Pathology, 3 Vols.
Charcot, J. M., Localization of Cerebral and Spinal Diseases.
Charcot, J. M., Diseases of Nervous System, 3 Vols.
Binz, C., Pharmacology.
Laveran, A., Paludism.
Koch, Robert, Etiology of Traumatic Infective Diseases.
Marie and Souza, Leite. Acromegaly.
Hirsch, August, Geographical and Historical Pathology.
Gull, Wm. W., A Collection of the Published Writings, of.
Marchiafava and Bignami, Summer-Autumn Malarial Fevers.

Donations are as follows:

Dr J. J. Thomas, 40 Bound Volumes, Various.

Dr H. A. Christian, Medical Papers dedicated to R. H. Fitz, M. D.

Mrs. C. J. Aldrich, 117 Bound Volumes, Various.

Dr C. A. Hamann, 26 numbers of Journals. Bailey—Diseases of Nervous System.

Dr C. H. May, Diseases of Eye.

Dr J. D. Jones, 3 Volumes.

Dr H. T. Brooks, New York Post-Graduate Hospital Contributions to Medicine and Surgery.

Mrs. Howard Straight, 200 Bound Volumes, Various.

Dr F. C. Taylor, 30 Volumes, Various.

Dr E. L. Keyes, Transactions American Association of Genito-Urinary Surgeons.

Dr S. A. Welch, Transactions Rhode Island Medical Society.

Dr A. R. Baker, 75 Reprints, Various.

Dr H. S. Upson, Insomnia and Nerve Strain.

Hon. A. L. Harris, State and Local Taxation.

Dr H. E. Handerson, 4 Volumes, Various.

Dr H. O. Feiss, 12 Numbers of Journals.

Dr A. I. Ludlow, 3 Reprints. Dr Ludlow has also presented to the Museum a set of Surgical Instruments from Korea; also the Shoe of a Chinese Lady, this shows the effects of "Foot Binding" as the shoe measures just three (3) inches in length.

Dr W. H. Weir, Goepp's State Board Questions and Answers.

Dr Thos. E. Satterthwaite, Diseases of the Heart and Aorta.

Dr A. S. Maschke, Pfaundler and Schlossman, Diseases of Children (English Translation).

The following Journals have been added to the files.

Archives of Otology.
Archives of Ophthalmology.
Archiv für Laryngologie und Rhinologie.
Archives Générales de Chirurgie.
Comptes Rendus Hebdomadaires, Société de Biologie, Paris.
Journal of Obstetrics and Gynecology of the British Empire.
Monatsschrift für Ohrenheilkunde.
Medizinische Klinik.
Zeitschrift für Geburtshülfe und Gynäkologie.
Zeitschrift für Krebsforschung.

Deaths

Joseph Hibble, of Enon, O., died August 10, aged 85.

Anna S. Morgan, of Toledo, O., died July 30, aged 42.

Eli Conn, of South Akron, O., died August 7, aged 70.

Thos. W. Long, of Byesville, O., died July 29, aged 46.

Wesley Peters, of Lancaster, O., died August 12, aged 51.

Wm. H. Webster, of Dayton, O., died August 10, aged 39.

Lewis C. Anderson, of Greenville, O., died July 24, aged 58.

Aaron T. Miller, of Shanesville, O., died August 7, aged 53.

Joseph Eichberg, of Cincinnati, O., died August 15, aged 49.

Lawrence H. Brundage, of Xenia, O., died August 1, aged 42.

Ezra H. Tobias, of Bowling Green, O., died August 2, aged 39.

Wm. W. Hamilton, of East Liverpool, O., died August 5, aged 46.

The Cleveland Medical Journal

Vol VII October, 1908 No 10

The Mechanics of Lateral Curvature

By HENRY O. FEISS, M. D., Cleveland, O.

By the mechanics of lateral curvature, I mean the study of the forces which actually bring about the pathologic effects. I assume that there are remote causes inciting these forces, but with these remote causes I wish to have little to do. I simply wish to deal with the proximate causes, or, as I say, the forces which actually bring about the disfiguration. This distinction between remote and proximate causes is in the main arbitrary, but in the present investigation is especially appropriate because the proximate causes of scoliosis are already suggested in conditions of the normal.

It is namely in postural asymmetry in the normal that these forces seem revealed, and tonight I propose first to demonstrate the forces implied in normal posture or what I style the tendencies of normal posture, and secondly, to offer an explanation of the important points in the pathologic as based upon these normal tendencies.

The relation between normal posture and scoliosis has already been carefully studied, notably by Lovett, but in these works the column alone has been examined. It is my purpose to consider the body in its entirety, for I believe the peripheral strains are just as essential for the comprehension of the phenomena as the strains in the column.

I. THE NORMAL TENDENCIES OF POSTURE

Segmentation and balance: The first point to which I wish to call your attention in the normal is the law of segmentation and balance. The body is not a firm mass but consists of segments

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Presented at the Philadelphia County Medical Society, May 13, 1908

For a fuller and more technical account of this subject, the reader is referred to the original articles appearing in the American Journal of Orthopedic Surgery, 1906, 1907, 1908.

jointed together, one segment resting upon another. In all postures in which a balance is maintained the weight of these segments must be evenly distributed about an imaginary perpendicular which passes through the center of gravity and which is called the line of support; so with every change of attitude there must be a constant equilibration by means of these shifting segments.

The integrity of the thorax: The next point to which I wish to refer, is the fact that the thorax may be regarded as one of these segments so that in every movement it acts as one piece. This is due to the construction of the thorax, because the upper 10 ribs are closely connected in front by the sternum and intricately joined behind each with two vertebræ and one transverse process. There is, moreover, an intimate ligamentous union between the ribs and vertebræ; so that the dorsal column really acts as part of the thorax. Of course, there may be some inherent motion between the vertebræ of this part of the column, but practically speaking, the thorax including the dorsal column moves as one piece.

The trunk muscles: Another important point in the anatomy, as it applies to posture, is the manner of regarding the trunk muscles. According to the anatomist, G. Herman Meyer, the muscles running down the torso from the neck to the pelvis may be considered as a sheath or tube containing the viscera. He divides this tube into five systems (Fig. 1.) referring to them as the posterior system, the anterior system, the two oblique systems which cross each other, and the transverse system. The posterior system includes the large spinal muscles; it begins at the occiput and ends at the pelvis. The anterior system begins at the neck with the sternocleidomastoid and is continued from the sternum to the pubis in the shape of the two recti. The transverse system is the transversalis muscle. With regard to the oblique systems, he considers the external intercostals as continuous with the external oblique, and the internal intercostals as continuous with the internal oblique, the difference in the region of the thorax being simply that the ribs form rigid interruptions. The ribs, therefore, may be considered as nothing more than stiffenings in a flexible muscle tube and act like an umbrella in keeping this tube spread.

Peripheral strain: As a result of the segmental movement of the body, to which I already referred, you will readily understand that the tube of soft parts, made up as I have shown you, and connecting adjacent segments, must be subject to a constant change in tension. Therefore, if one segment moves upon an underlying one, the fact that such motion takes place must imply that the soft parts which connect them must be under greater tension on some sides than on others; so if the thorax moves as a segment any diversion thereof must mean that its walls come under strain on account of this peripheral tension.

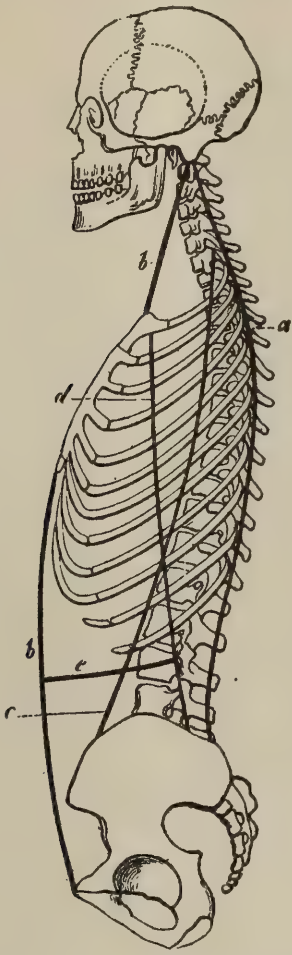


FIG. 1. G. Herman Meyer.

The scheme of the trunk musculature indicating the direction of the various muscle pulls. a—posterior longitudinal muscle pull (m. sacrospinalis). b—anterior longitudinal muscle pull. c—oblique descending muscle pull. d—oblique ascending muscle pull. e—transverse muscle pull.

Studies on the living: To illustrate these points, let us turn to photographs of the normal. There are two primary positions —lateral bend and twist. All asymmetric attitudes come under one of these two heads, except those in which the two are combined. Studying first lateral bend, you will note the movement of the thorax as a unity and the tension of the muscular tube on the convex side of the body. This tension bears directly upon the thoracic wall which must, therefore, be under strain so that the ribs on the convex side must tend to distortion. The concave side of the body is relaxed. The picture of twist brings out the same general principles. Again it is plain that the ribs are strained owing to the tension of the peripheral tissues.

Röntgen pictures: In the examination of Röntgen pictures these points are also borne out. If we take a fetus and bend it to one side (Fig. 2), the results of peripheral stress are noticeable in that the thorax becomes narrowed on the convex side; but there is more, for the ribs actually descend and separate on the same side on account of the extreme tension. In a twist (Fig. 3), we note about the same result, although it is a difficult picture to interpret on account of the distortion of shadows due to the conical radiation of rays from the anode of the tube. In two living children which were bent to one side and radiographed,

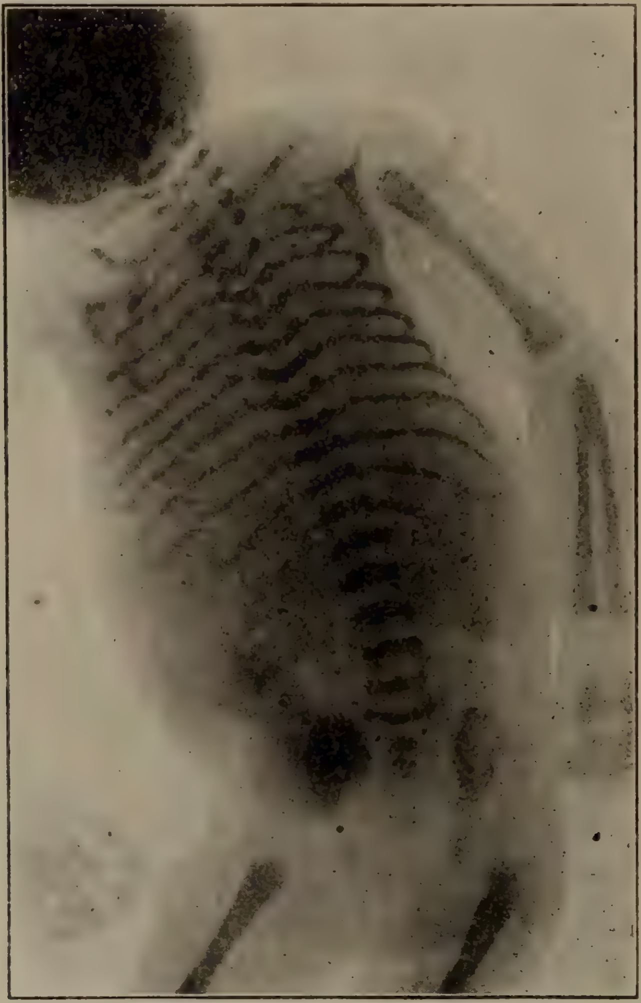


FIG. 2. Röntgengram of fetus bent sideways.

the result was just as striking, and as in the fetus we note the narrowing of the thorax on the convex side and the descent and separation of the ribs.

Summary: So far then, the points to which your attention has been called as showing the forces implied in normal postures are, first, the conception of the segmentation of the body and the shifting of these segments about the line of support to maintain balance, secondly, the fact that the tube of tissues connecting superimposed segments must be subject to a constant change of tension, and thirdly, that if we regard the thorax as a segment its diversion must mean that its walls come under strain on account of the peripheral tension of the soft parts, so that the ribs tend to distort, changing their shape and their direction.

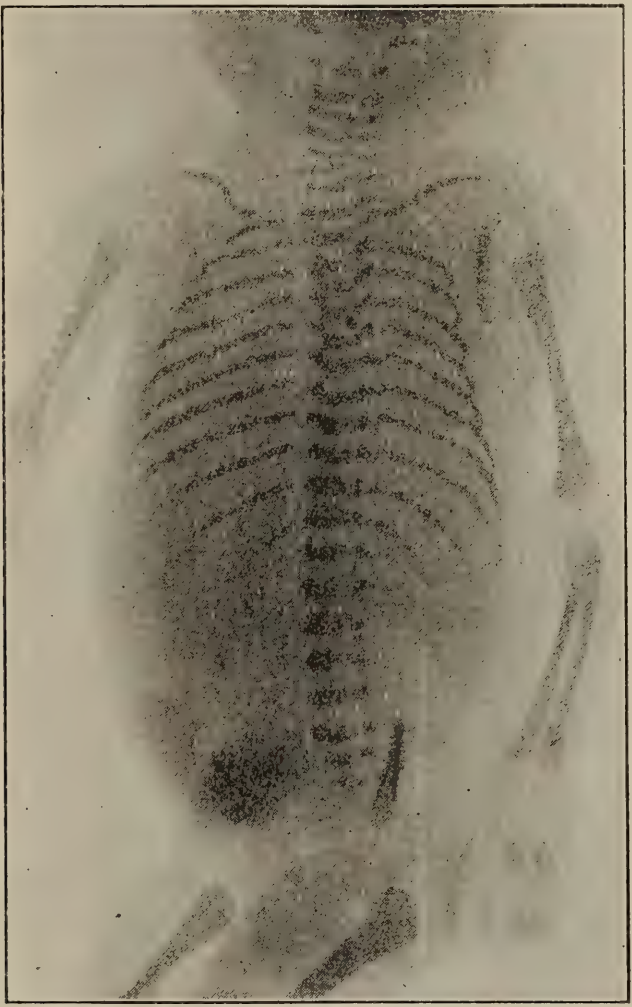


FIG. 3. Röntgengram of fetus twisted.

A deduction as to the effect of rib strain on the vertebræ: We have proved that the ribs are under strain; consequently, we may deduce that such strain must be communicated to whatever the ribs are attached. Now the ribs do have an intimate attachment to the posterior part of the dorsal vertebræ, therefore the strain which enters the ribs must be conveyed back into this part of the column, *viz.*, the row of arches. So you can readily comprehend that if the dorsal column is moving primarily with the thorax, its posterior part, the row of arches, must be strained in a direction necessitated by the potential strain in the ribs, which tendency as compared with the primary dorsal movement must be regarded as a separate one of reaction. This of course must apply both in lateral bend and in twist (Fig. 4).

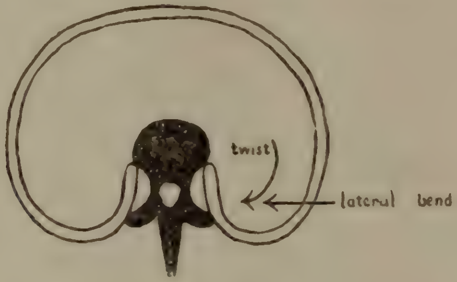


FIG. 4. Arrows represent direction of force as due to lateral bend or twist (implied in potential strain of rib) with reference to arch of vertebra.

Demonstration of models: Let me next illustrate the normal tendencies of posture as so far deduced, with mechanical models which I have had constructed for the purpose. These models cannot prove anything that I have stated but they can illustrate my views, and, in this fashion, I believe I can make myself clearer as to what has come before.

Model of the thorax: The first model (Fig. 5) represents the thorax as a unity, the dorsal column being regarded as an integral part of the thorax and moving with it. I have, therefore, represented the column by a curved stave of wood and attached to it these leather ribs and sternum, to imitate nature. The parietal muscular system is based upon the conception of Meyer and I have used tapes to carry out the different pulls. The posterior spinal system, the anterior system and the two oblique systems are represented, the transverse system has been left out for the sake of simplicity. These pulls end in the base of the model representing a fixed basic resistance. Movement is enabled by two joints suitably contrived for the purpose. We have then a model simulating the normal thorax with the exception of the elasticity of the ribs which are here purposely made more flexible

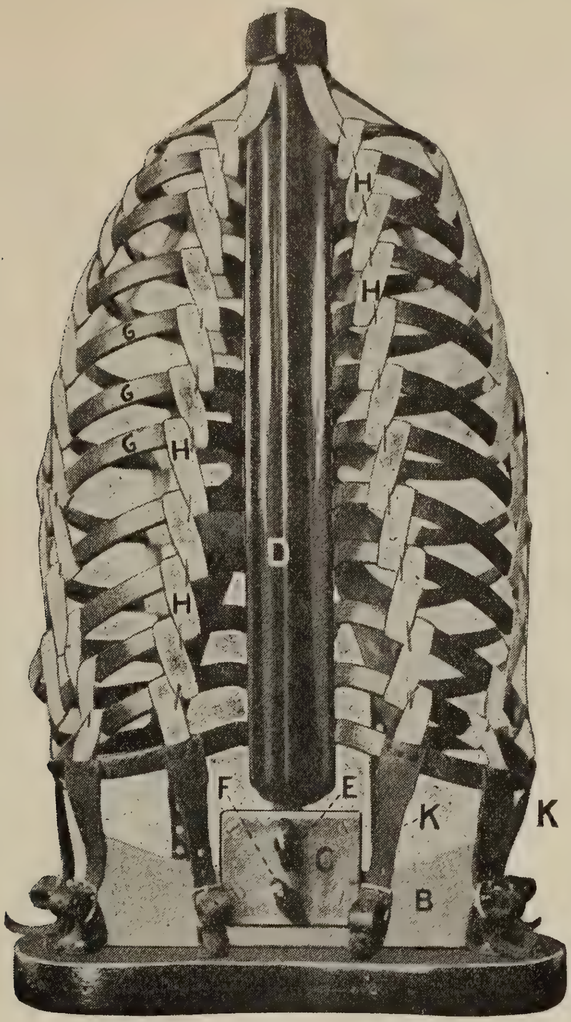


FIG. 5. Model of thorax, seen from behind. A, base; B, metal arc; C, block, gliding on arc; D, stave representing the dorsal column; E, set-screw fixing the ball and socket joint of dorsal column in block; F, set-screw fixing block to arc; GG, leather ribs; HH, tapes representing muscles; KK, adjustable leather straps.

than in nature, in order to exaggerate the distorting tendency for purposes of clearer illustration.

Illustrating first side bend (Fig. 6) with the center of motion at the center of the base you will note the tension on the convex side so that the leather ribs descend and separate, thus causing contraction of that side, whereas, on the other side there is no strain and the tapes are relaxed. Such a bend however is not the usual bend in nature, because, on account of the balance of segments around the line of support, the base of the thorax normally swings one way while the apex swings the other. We illustrate this by swinging the model in a similar fashion (Fig. 7). This kind of a bend, however, brings out exactly the same points as the previous position; therefore, whatever the nature of the

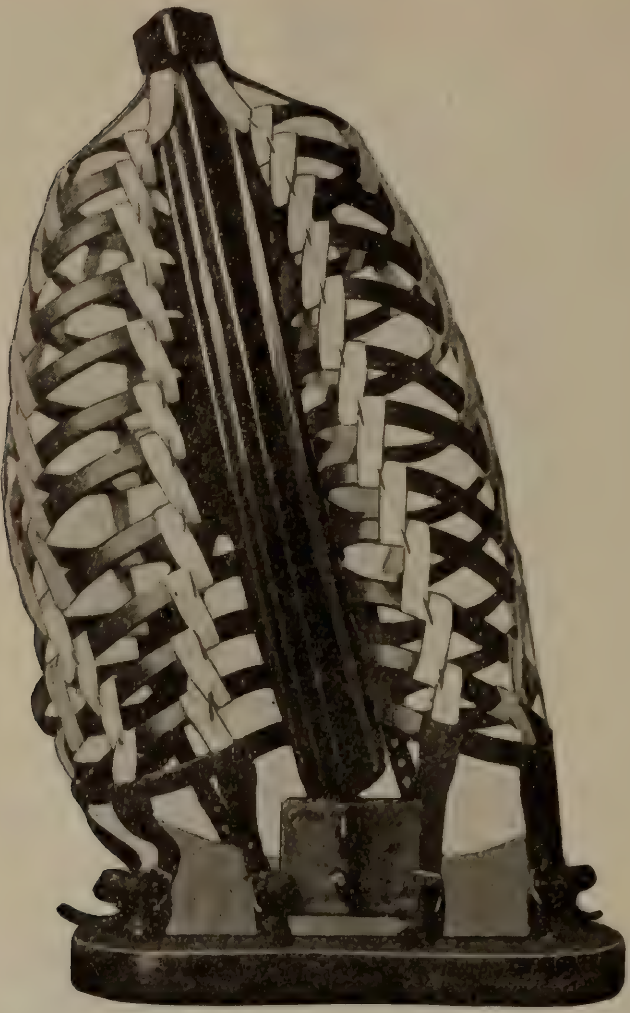


FIG. 6. Model of thorax. Pure side bend.

side bend the points illustrated in the model are the same, the important thing being the contraction of the thorax on the convex side implying an approximation of the lateral rib wall to the column.

To illustrate twist we rotate the thorax on its base (Fig. 8), the result of peripheral tension is to be seen in the general spiral arrangement of the tapes and a general distortion of all the leather ribs, although the path of this distortion is not quite as distinct as with side bend.

Cross-section model: The question now is, what is the result of these forces in the individual dorsal vertebra? To illustrate such tendencies I had another model made illustrating the mechanical arrangement of the ribs and column and muscular pulls as seen in cross-section (Fig. 9). The tapes representing

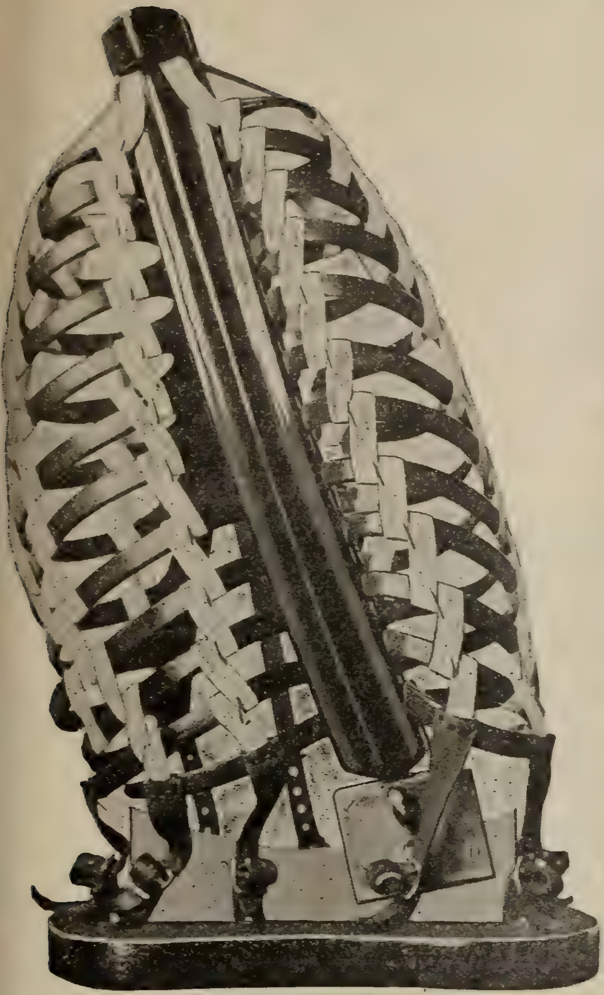


Fig. 7. Model of thorax.
Side bend with base swinging on the arc.

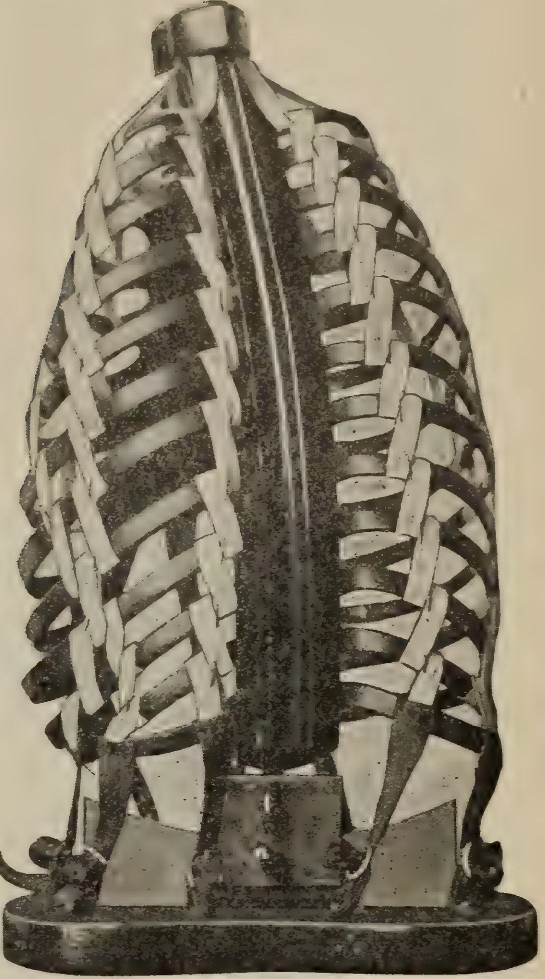


Fig. 8. Model of thorax. Twist.

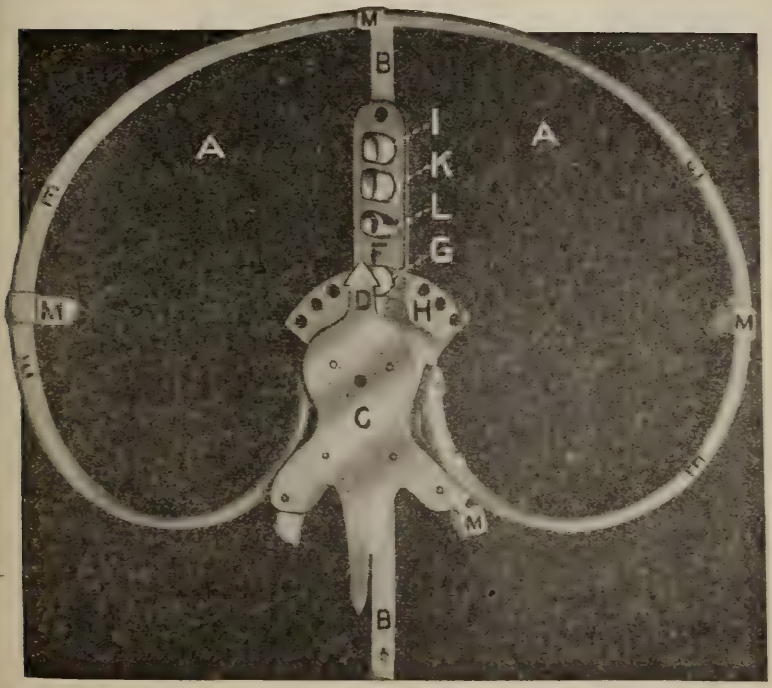


Fig. 9. Model of vertebra and rib. A, base; B, median strip; C, vertebra; D, arrow, indicating direction in which the vertebra points; E, leather rib; F, steel axis on which vertebra is pivoted; G, retaining peg, holding arc of vertebra to steel axis; H, metal arc fastened to base of vertebra; I K, fixation pegs passing through steel axis into base; MM, elastic tapes representing the muscles.

the muscular pulls are arranged according to the same system as in the previous model, but the difference here is that the vertebra may revolve on either one or two axes, a primary axis representing the axis of motion of the whole rib ring regarded as one piece and a secondary axis representing the axis of motion of the vertebra by itself. In order to hold the vertebra to the primary axis, a retaining peg is used. In this way the vertebra may be revolved either on the primary or by itself, depending upon whether the retaining peg is in place.

The first motion to illustrate is lateral bend (Fig. 10), and with the retaining peg in place holding the vertebra to the primary axis, a position is obtained corresponding to the lateral bend of the first model. The result of peripheral strain is just the same as in that model, being expressed by the contraction of the rib ring on the one side and the relaxation on the other. The main question here is, what is the effect of the potential strain in the rib ring upon the individual vertebra? To answer this, the retaining peg is removed, thus permitting the vertebra to rotate on its own axis if the tendency is there. The result is (Fig. 11), as you see, an actual rotation of the vertebra so that its arrow points to the side on which the rib ring is contracted. This movement may be referred to as a retrogression and bears out

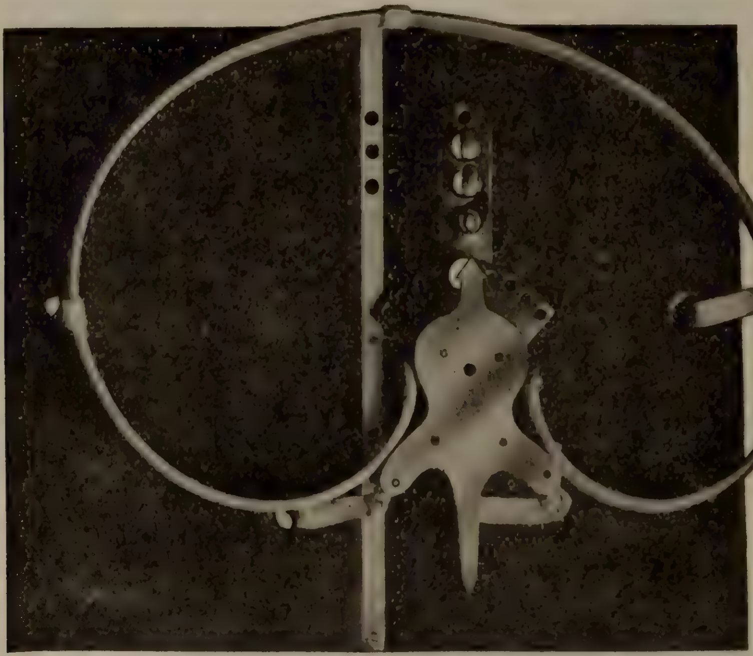


FIG. 10. Model of vertebra and rib. Side bend, the retaining peg in place.

the tentative deduction, earlier made, as to the effect of rib strain on the individual vertebra.

Let us next illustrate twist. With the retaining peg in place holding the vertebra to the primary axis, we again obtain a position of the rib ring corresponding to the twist of the former model (Fig. 12), and the result, as you might expect, is a spiral tension of the elastic tapes with some distortion of the rib ring similar to that of the former model. We again ask the question, what is the effect of the potential strain on the vertebra as stored up in the rib ring thus placed? To answer this the retaining peg is removed (Fig. 13), and we immediately note that the vertebra rotates to the side on which the contraction of the rib ring becomes greater. Comparing this position with the final position of lateral bend, we note that they are almost the same, and by manipulating this model we are able to ascertain that the position of the vertebra and the shape of the rib ring are dependent upon the actual point at which the vertebra rests, no matter by what path it arrives there, because the final position is simply one of equilibrium for that point.

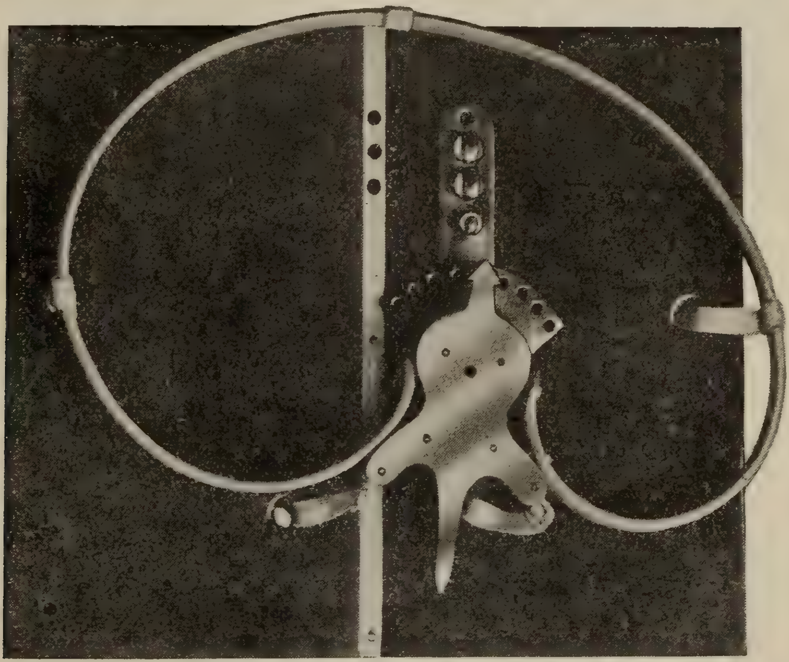


FIG. 11. Model of vertebra and rib. Side bend, retaining peg removed.

The relation between a normal tendency and a pathologic fact: In this way I have illustrated the tendencies of posture in the normal. It seems to me that I have presented sufficient

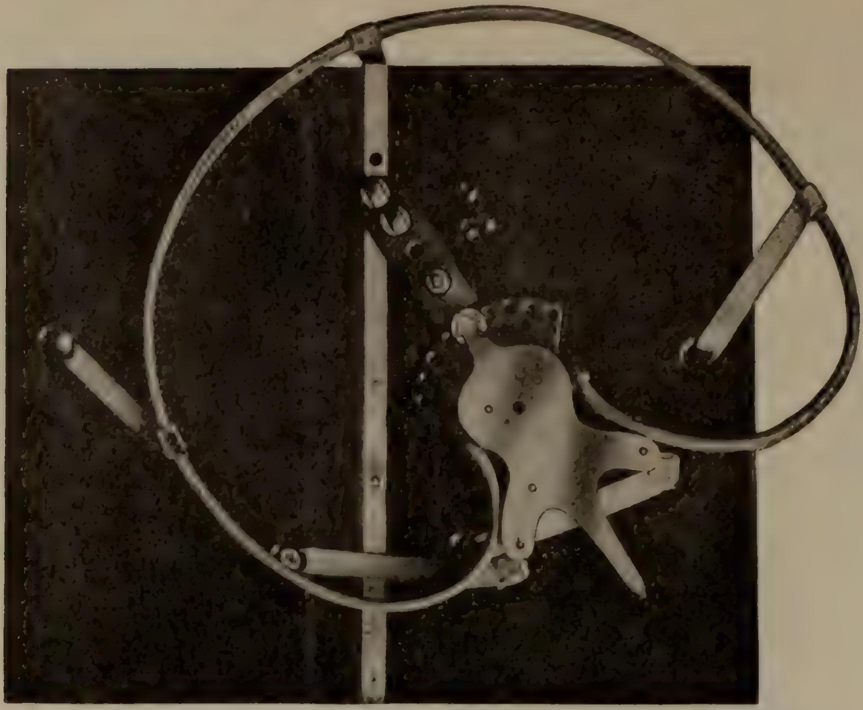


FIG. 12. Model of vertebra and rib. Twist, retaining peg in place.

evidence to offer an explanation of the important points in the pathologic as based upon these normal tendencies. For if our conception of normal strains in terms of distortion is correct, then we may assume that these distortions become permanent if the strain is carried beyond the limits of elasticity. We may suppose that prolonged or repeated strain, or diminished resistance in the skeleton, may bring this about. So in making our explanation, if we simply assume that the limits of elasticity have been overstepped and that the bones have taken a permanent set, we can readily understand how a normal tendency results in a pathologic fact.

Chief distortions of the scoliotic specimen: Before making the explanation, let me briefly run over a few of the important findings in the pathologic. Taking a typical scoliotic (Fig. 14), you will note the thorax contracted on the one side and expanded on the other. On the side of the contraction the ribs have also given at their angles, descending in an up and down plane. In the column, you will note the curve. The bodies of the vertebræ form a greater curve than the spinous processes, the rule being that the fronts of the bodies point toward the side of the convexity of the lateral curve. These are the essential points but there are other points to which I will refer more fully as I develop the explanation.

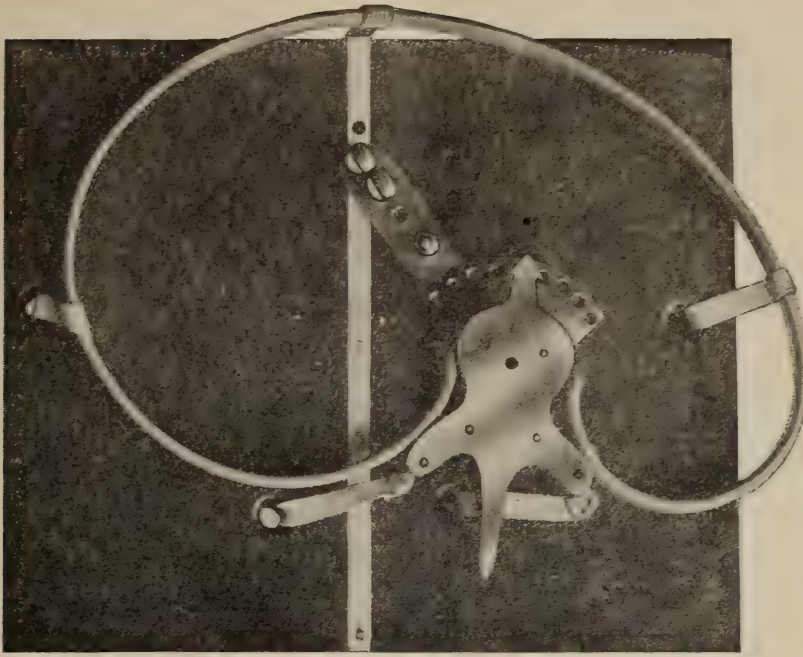


FIG. 13. Model of vertebra and rib. Twist, retaining peg removed.

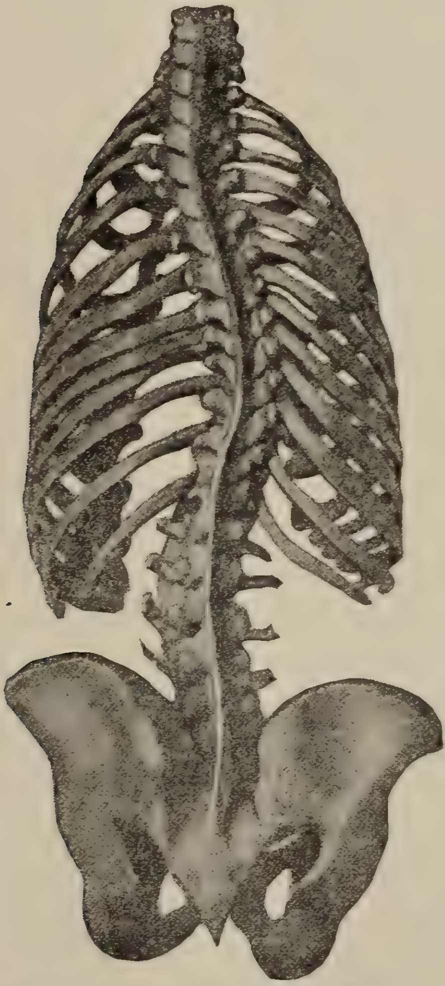


FIG. 14. From Whitman (Pfeiffer). Scoliotic specimen, showing distortions of thorax.

(Concluded in November issue)

Observations on the Medical Progress in the Orient

By IRVING LUDLOW, M. D.
Surgical Pathologist, Lakeside Hospital, Cleveland, O.

We are all well aware of the fact that it is the natural inclination of those who travel to record their observations. It is also true that some who have written concerning foreign lands have given us views which have been based upon the observations of others rather than upon their own personal experience. Sometimes the traveler has simply entered the port cities of some great country and then written articles or even books upon topics with which he is little conversant or upon information gained from hearsay. In the medical centers of Europe, there are constantly large numbers of our fellow countrymen and we are frequently favored with most excellent accounts of the medical work in that part of the world. It was only after writing this, that the excellent paper of Dr J. E. Mears, of Philadelphia, entitled "Modern Medicine and Surgery in the Orient," was brought to my notice, and when read it was found that we had visited many of the same places. There are however comparatively few medical men who have had an opportunity to observe the progress which is being made in the Oriental countries, especially China, Corea and parts of India, teeming with their millions of people.

A large part of the progress has been made through the efforts of physicians from our own country in whom we, as members of the medical fraternity, should have great interest. It is my firm belief that it is only lack of information that has been responsible for this apparent indifference and anything which might be done by me to awaken interest in their behalf would only in small measure repay them for their great kindness and courtesy during my visit. In order that you may be familiar in general with the territory covered, the following outline of our trip may be of value. The first place visited was Honolulu where two weeks were spent. After two months in Japan a four months sojourn was made in China and Manchuria followed by three months in Corea. Returning to Japan the trip was continued westward to the Straits Settlements and Burmah. The next three months were spent in India and the remaining six weeks were occupied in visiting Ceylon and making the homeward trip to New York. After four years in one of our home hospitals and a year's visit to the hospitals of Europe you can well imagine my eagerness to see the places above mentioned. The trip was made with a gentleman who, though not a medical man, is greatly interested in such work and has contributed largely to the support of our colleges at home and in the Orient. Inasmuch as the prime object of the journey was to gain as complete a knowledge as possible of all the various problems of life in the Far East, our observations were not confined simply to medical problems. However there was ample opportunity to visit many hospitals rarely seen, even by the medical men who have previously visited these countries, and in addition some occasions were afforded for practical experience, chiefly of a surgical nature.

In passing, some mention should be made of our Pacific possessions. Only those who have visited the Hawaiian Islands can realize the truth of the name "The Paradise of the Pacific." Every American traveler may well be proud of them for there is probably no other country which presents more alluring features, such wonderful pictures of sea, sky, plain and mountain. The combination of tropical sunshine and sea breeze produces a climate which is unexcelled for its equitableness and as in nature's bounty the climate was made close to perfection so it seems all other conditions were met to make this place an ideal home. The stranger feels this immediately upon his arrival and the charm of nature is amplified by the proverbial Hawaiian hospitality. With such conditions one would think there would be little need of medical men or hospitals but disease seems to be no respector of this so-called paradise, and our own government has made its usual provisions for the care of the sick. The only hospital which was visited seemed to be well equipped and doing excellent work along all lines and its staff were most courteous.

JAPAN

So much has been written within the past two or three years concerning the wonderful progress of medicine in Japan that it would be presumptuous for me to present any extended account of it. The large majority of the hospitals follow the foreign style with a few modifications. Through the kindness of one of the prominent surgeons of Tokio, Baron Takagi, it was my good fortune to be present at the annual banquet of the physicians and surgeons of Japan. There were about 200 men present and though the occasion was only of a social nature it gave an unusual opportunity of meeting so many of the Japanese medical men. Professor Sato, who has since received the title of Baron, was then in charge of the surgical service at the Imperial Hospital. His general work and operative technic were excellent and his staff seemed to work with harmony and precision.

Among the many things which impress the visitor as great factors in the success of this people are their great faculty of imitation, their wonderful attention to things which are often considered unimportant, their constant desire for information and their absolute obedience to those in authority. It is this last factor which was in part responsible for the excellent showing made by the medical department of the army in the Russian war. An American who was in Manchuria during the war told me that he had seen soldiers almost famished from thirst restrain themselves from drinking water out of pools or wells marked unsafe. Again obedience and a good understanding of the proper treatment for bullet wounds saved many lives. Before a battle a clean undergarment was put on and each man carried a package of sterile gauze and a bandage. As soon as a bullet wound was received the gauze was applied. In the great majority of cases no other immediate surgical interference was attempted, even though it seemed in many instances that life was in great peril. During my stay one soldier was seen who had been shot through the lungs, another had been shot through the head and though suffering the loss of eyesight made an otherwise perfect recovery. There are said to have been large numbers of such cases which would doubtless have proved fatal had they been subjected to immediate operation in the field hospitals.

While Japan has made such great strides in scientific lines there still exists the immense and interesting field of Japanese folk medicine with its many superstitions, as the few following extracts will illustrate:

"If you have a mole under your eye, drop three red beans into a well and it will disappear."

"If you see a person with trachoma, spit three times when that person is not looking at you, or you will catch the disease."

The spread of measles may be stopped by writing the name of a certain noted warrior over the doors of the house. Tradition has ascribed to this warrior the power of warding off disease.

In the case of beri-beri there is a famous stone, called the pivot-stone, shaped like the pin that fastens a fan together; hence its name. The location of this stone is indicated by a pile of salt, which also possesses remarkable powers. This salt is rubbed on the soles of the feet by those who wear clogs, and is dropped into their shoes by soldiers, who are largely afflicted by the complaint.

A sure antidote for small-pox is to possess a photograph of the pock-marked face of Hon. Inonye, M. P., the idea seems to be that as Mr. Inonye is such a noted orator, the very sight of his face would overawe the small-pox god.

Japanese remedies figure in proverbs:

"There is no medicine for a fool."

"Medicine costs ninefold."

"After ginseng, death by hanging," because ginseng is so expensive the man who uses such a costly medicine will be driven to suicide to escape bankruptcy.

"Good medicine is bitter to the mouth."

"Dragon's blood is a sure cure for syphilis."

The fact that a doctor does not always practise what he preaches or take what he prescribes, and may not keep well himself is illustrated by the proverb: "I ska no fuyojo"; "The doctor's carelessness."

The quack doctor is a frequent sight particularly in the neighborhood of some of the temples where he may be seen selling his wares. One of these fellows whom we saw in Osaka had a large dried fish which he was cutting into small bits and selling in very small quantities, doubtless to impress the purchaser with its great value as a remedy. Through an interpreter it was found that this dried fish would cure practically any disease of the eye, chest or abdomen. At a shrine in the temple a large number of paper eyes were hung before the god in the hope that the one who offered might be cured of his eye disease. At one of the meetings of the Asiatic Society of Japan an interesting article was read upon Japanese patent medicines. Even though one cannot read the street signs and advertisements, it is apparent by the illustrations which often accompany them that many refer to medicine. Here again a few illustrations may be of interest.

1. Hotan, a cordial composed of camphor and peppermint. The name means "gem medicine" or "jewel medicine." It is said there once lived a man named Mentor who was distinguished in penmanship and the art of drawing, and whose classical name was Hotan. He kept a drug store to which one day came an old man on business. The two fell into more intimate conversation and, when the old man went away, he left with the druggist the prescription for hotan, which quickly became popular and distin-

guished among nostrums. The result was that in a short time Mentor obtained great riches, and in order to commemorate the old man's kindness, he laid away a certain portion of his profits for his benefactor. The advertisements of this remedy may be seen in the *Japan Times.*

2. Mankitan. The name means "ten thousand dollar medicine," it is an anodyne pill.

3. Seikisui, signifying "purifying wonder-water." This is an ophthalmological remedy invented by an editor who was a famous scholar of Chinese literature and the art of poetry.

4. Jitsubosan. A decoction used as a specific in female complaints. The name signifies "real mother medicine" because it takes as good care of a sick person as the real mother would.

5. Shinyahu or "divine remedy." It has a sharp smell, is said to resemble "pain killer," and is used in a similar way.

6. Gozoen. These are pills as a tonic for the gozo or the five organs, heart, lungs, stomach, liver and kidneys.

7. Kiogan, meaning the "wonderful effect pills." They are the size of a mustard seed and are given to infants. Another and similar remedy seen advertised to cure worms in children is called "saving life pills."

8. Hifumi, or "one, two, three." This is a plaster used for skin disease. Its name includes a pun on the word hifu, meaning skin. It also indicates that it is useful for several complaints and may emphasize the fact that it has no rival.

9. Nihachisui or "twice eight water," a toilet water which is warranted to make girls "sweet sixteen." The advertisements of this adorn the posts all over Tokyo.

10. Sheishintan or "refreshing heat medicine." In the advertisement it states that this pill is indispensable both at home and abroad, an invigorant and a cure for headache, giddiness and for refreshing the drooping mind. It not only cures digestive disturbances but is an invaluable remedy for seasickness and every illness to which one may be liable during hot or cold seasons. Sold at all druggists throughout Japan, but purchasers are cautioned against fraudulent imitations and to look always for the trade mark "mermaid."

These facts show what a wonderful influence the example of the patent medicine concern is exerting, even in the Orient, and it only emphasizes our duty with regard to such quackery. Before passing on to another subject it would be fitting to express the great appreciation of the work which the nurses of

Japan are endeavoring to accomplish. Their service in the late war is known to almost everyone. One of our own American women, Miss West of the American Presbyterian Mission of Tokyo, last year received from the Empress of Japan the Order of the Golden Crown in recognition of her service rendered during the Russian war.

CHINA

When we think of the amount of energy put forth in America in behalf of eighty million people, what must be the need of China with its vast population of four hundred million? In our own land there is scarcely a place where a sufferer cannot obtain help, yet in one district in China, in my own travels, there were a million people whose call for help meets no response. It was only with the advent of the medical missionary that any intelligent service could be rendered. Only a few government hospitals exist in China. Those at Shanghai and Hong Kong belong to the British and are used chiefly for their own people. Those at Tsing Tau are for the Germans. The Chinese government has of late been making an effort to establish a few hospitals in the larger cities and provincial capitals.

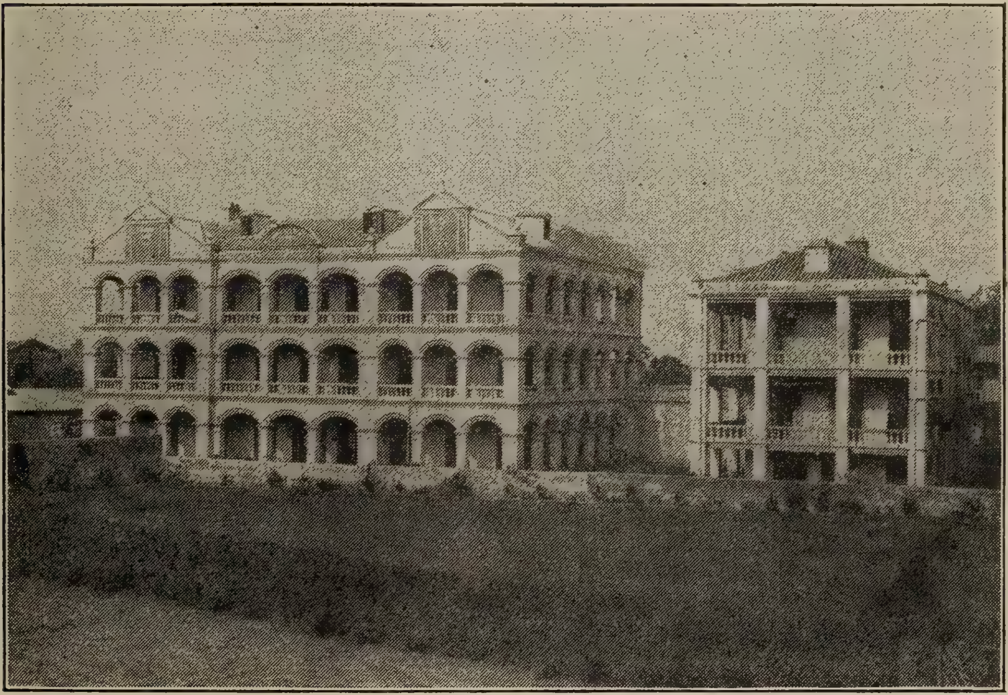
The first city visited in China was Shanghai. The Medical Missionary Association of China had just finished its session at which many interesting papers had been presented. When one stops to consider the multitude of duties and responsibilities which fall to the medical missionaries it is evident that they deserve great credit for their endeavors to advance the science of medicine. It is a source of regret to think of the little interest that we in America have taken in their work and so far as one is able to observe they receive from us but little encouragement even in their scientific research. Their journal contains excellent material and should be in more of our libraries. Shanghai being made up of so many foreign settlements is fairly well supplied with hospital facilities but mostly for the benefit of the Europeans rather than the Chinese. The Shanghai General Hospital is a modern four story brick structure. Upon the first floor are wards for patients who pay one dollar a day, the second for patients paying two dollars a day, while on the third story are more expensive private rooms with bath. The fourth story is used for the kitchen. There are operating rooms on the first, second and third floors. This hospital is for foreigners only and any reputable physicians may bring cases to it. About 1500 patients are treated here each year. The nursing is in charge of sisters of the Catholic faith.

There is also the fine Municipal Isolation Hospital, one of the best equipped in China and which compares favorably with most in America. The accompanying photograph shows the administration building and a large wing. It is the plan to add another wing of the same proportions as soon as it becomes necessary. There are wards for small-pox and scarlet fever, private rooms and wards of eight beds. In addition to these there are several detention rooms. Although situated in a populous district the authorities have been careful to provide extensive grounds.

For the special care of the Chinese, several of the missionary societies have established hospitals. One in charge of the London Missionary Society has accommodations for about 60 patients with a new portion recently built for a woman's ward. St. Luke's Hospital under the care of the Episcopal Church can accommodate about 100. There is one hospital for women, under the care of the Women's Union Mission, where excellent work is being done. In China it has been almost imperative that work for women be kept entirely separate, for it is only within the past few years that men have been allowed to have any part in the care of women. Many, particularly of the higher class, would doubtless prefer death rather than allow a male physician to take charge of them. In spite of this great need there are as yet only two or three medical colleges for women in China. One of these is the Hackett

MUNICIPAL ISOLATION HOSPITAL, SHANGHAI, CHINA.

Medical College for women, in Canton. In connection with this institution is the David Gregg Hospital for women and children and the Charles P. Turner Training School for nurses, all being brought into existence through the tireless efforts of Dr Mary Fulton. What a marvelous change has been wrought in comparatively few years, for when she first went to China she was threatened with death by the natives in the event of a fatal outcome of any case. Today the majority are willing to accept any risk, however great, such is their unlimited faith in the foreign doctor. The medical college was opened in 1901 with 11 students, and now they number 40. The course is four years and is as near as possible like the courses in America. The graduates become as fine physicians to the women and children of their own race, as do the doctors in our own country to our people. At the commencement held in January, 1908, H. E. Chang, Viceroy of the two Kwang Provinces, was present and himself presented the diplomas to the five young women who had completed their course. This is an honor which those who are unacquainted with the Chinese can scarcely appreciate. The Viceroy's address translated reads in part as follows:



DAVID GREGG HOSPITAL, CANTON, CHINA.

"In the Western suburb of Canton city there is a hospital supported by and under the management of the Americans of the religion of Christ. I am well pleased with their having the mind to help the world with their excellent teachings. I came purposely to see the ceremony and I cannot let it pass without giving some encouragement to all the medical teachers, both Chinese and foreigners, and some encouragement to all the female medical students. The medical science of our country originated from Shan Nung tasting the herb to distinguish the drugs. Therefore the book of Noi Krugly Wong Tai is considered to be the first progenitor of the science of medicine in this empire. Upon examination of that time it was found to be several thousand years before Christ. Since then the science has become gradually more and more simple. In the recent generation the science of Western medicine has greatly advanced. It separates the false from the genuine and the nature of cold from that of heat. Proper medicine is prepared to do away with the evil and improve the deficiency. Chinese medical principles attach more importance to hypotheses without careful examination. The science of Western medicine aims at true facts. Hypotheses and true facts must depend upon each other. Medicine is to cure the sick and to strengthen the weak, so as to make the people enjoy long life. We must seek the preservation of our health in our ordinary drinking, eating, living and clothing. Women ought to do their duties, to serve their parents, to assist their husbands and to teach their sons. If a woman studies medicine then she will understand the science of hygiene and will consequently know how to perform her duties in the family. I shall look forward with unbounded delight to such a time." This may not sound like a commencement address but it probably made a greater impression on its hearers than the majority delivered in this country.

When asked to operate for fibromyoma of the uterus, vesical calculus and ovarian cysts, at the hospital, with the Chinese women physicians as assistants, the proposition seemed at first preposterous. Could it be possible that Chinese women could be so far advanced as to carry out the technic of abdominal surgery? But again the old proverb "seeing is believing" was fulfilled and a more neat, dignified, calm and skillful staff would be hard to find. Not only are they good as assistants but some of the graduates perform operations with excellent results. One in particular is an exceedingly careful and clever surgeon and only a few weeks previous to my visit had removed successfully an ovarian cyst weighing 80 pounds. This same surgeon has had an enormous obstetric experience, most of the cases being out of the ordinary, for it is rarely that a physician would be summoned to a normal case. The clinical experience of students in all these institutions is extensive for, in addition to the hospital work proper, there is a dispensary having 50 to 100 or more cases each day. The Canton Hospital and Medical College founded over 50 years ago by Dr John G. Kerr, has always held a high place in the estimation of the Chinese. Dr Kerr's name was one of the foremost in this part of China, not only for his success as an operator but also for his great kindness to the people for whom he gave his all. Shortly before his death he returned to America and endeavored to awaken sufficient interest to carry out a plan he had in mind for the care of the insane. Although he met with little support, he himself with his usual determination returned to China and out of his own small savings erected the first asylum for the insane in China. His work has been nobly carried on by Dr Charles Selden who has given of his time and means. Hitherto the usual fate of the insane was to be subject to some such treatment as being chained to the floor or even put to death and the fact that there was a chance to cure an insane man was beyond comprehension. Now that these cures are being constantly made it is no wonder that this work is gaining the tremendous gratitude and support of the Chinese. New hospital work is being instituted by the University of Pennsylvania in connection with the Canton Christian College and under its care there is no doubt but that it too will take its place with the above mentioned institutions.

Returning again to Shanghai we had the unique experience of a house-boat trip to the city of Hangchow, a distance of about 150 miles. The approach to the city from the river along a narrow street emphasized the need of sanitation, for the sights and odors were even worse than those which one experiences in some of the streets of Canton. The Chinese have a proverb which reads, "Above is heaven, below is Hangchow." This might apply to some parts of the city which are indeed beautiful, but not to its approach. One need not necessarily go to a hospital to see a clinic, for often the approach to a temple answers the same purpose, for all along the way there is a line of beggars, the blind, deformed, an occasional leper, cases of elephantiasis, etc. We were told that on the great feast days the number reaches to the thousands. One little boy we saw whose eyes protruded fully an inch from the orbital fossa. Another boy was afflicted with such an extensive hypertrophy of the tongue that it protruded to the very tip of his chin and was an inch in thickness. My endeavors to photograph him failed, as he feared the camera. It is not unusual in these crowds to see a child with a red band around the head indicating small-pox or some other contagious disease. Over a little shop was a sign which read, translated, "Big and little foreign medicines."

In Hangchow there is a great medical center under the care of Dr Duncan Main. His hospital, like many others was started in small Chinese buildings to which he has added as he could obtain the means. One of the fine buildings in connection with it is a large hall with a seating capacity of about 1000. It is used as a public lecture hall and a college for Dr Main's medical students who number 60. At the hospital about 1,500 indoor and 50,000 outdoor patients are treated each year. Dr Main stands high in the estimation of the whole city. His advice upon civic as well as medical questions is frequently sought by the officials and he is a man who usually accomplishes whatever he undertakes.

On either side of the hospital are fine buildings which are occupied by two native physicians who were formerly students of Dr Main. Both of these men are doing excellent work and are very grateful for the knowledge of Western medicine. Despite the fact that China has failed in former times to reduce her medical ideas to an exact science, she nevertheless has always been well supplied with medicine shops. One of the largest is in Hangchow. The building is of Chinese architecture and after passing a number of street vendors, who occupy the approach to the more frequented buildings, we entered the richly furnished office. Here we were politely greeted and provided with a guide who immediately began to tell of this wonderful establishment. Upon being asked what they considered to be their most valuable tonic he made no reply but motioned to us as if he had something remarkable to show. We were led to a room or rather passage way containing a large number of cages for animals. In these we saw about 30 deer. Most of them had recently been deprived of their horns which, when ground up, are regarded as a most valuable tonic.

In another room various kinds of roots, beans, etc., were being roasted in great pans. At one side were a number of stone mills where the grinding was being done by men, all of whom were blind. It was a rather pathetic sight to see these men, yet one could appreciate the thoughtfulness of the firm in granting employment to this class of people who ordinarily must beg to gain a livelihood.

On the second floor was a store room filled with hundreds of large stone jars. These were variously labeled, two, four, six or eight flavors, the quality and price increasing with the increase in the number of flavors. Upon the roof were a large number of mats spread out and covered with herbs drying. In still another department men were wrapping medicine in paper, then placing it in a small bulb of wax which was afterwards sealed. There were great quantities of a black tar-like paste which was being put up in the form of plasters. It is a common sight to see these plasters which are put on the forehead for the cure of headache. The firm does both a retail and wholesale business and judging from appearances must make an enormous profit. After another house-boat trip of 120 miles we came to Soochow which next to Canton is one of the most typical of Chinese cities, there being very few European or American residents aside from the missionaries. In passing through the streets many pitiful sights are seen for often when a person is seriously ill he will be cast out into the street to die. In the court yard of one temple was a beggar with both legs cut off above the ankle. The stumps were excoriated and in a terrible condition. Through an interpreter he was directed to the missionary hospital but often such beggars prefer to suffer in order to make money.

One of the best pagodas of China is in Soochow and from it a fine view is obtained of the city with its so-called dragon street, probably named from its winding course, though many believe that a dragon lives under it. Another noted street is called dog-bite alley, so narrow that it would no doubt be hard to escape from an excited dog. As in all the large cities, there are public execution grounds with a stand for the magistrate to witness the beheading. The prisoner is usually summoned from jail and is at first uncertain whether it means freedom or death, but as soon as he finds a chair in waiting he needs no further notice for the prisoner is always taken to the place of execution in a chair.

China seems to be making a strong effort to rid herself of the opium curse, for during the past year many of these dens have been closed. Only a year ago dens were open in Soochow and in almost every city we visited. The majority are small places. As one enters the door there is a small anteroom where the opium is purchased usually in a paste form on a small piece of paper.

After procuring the opium, the Chinaman goes into the next room, reclines on a bench or wooden couch and enjoys his pipe peacefully. Many of the physicians have endeavored to do all in their power to aid those already addicted to opium. While great improvements are made in many cases and some cures are reported still the general opinion seems that the percentage of permanent cures is small. It is to be hoped that Great Britain and the other powers will aid China in lessening one of her greatest evils. Another evil which China is attempting to eradicate is that of foot-binding. Many theories exist concerning its origin. One being that years ago a princess was born with deformed feet and in order that she might not feel embarrassed all parents were ordered to bind their children's feet. Others say that it was for the purpose of keeping the women at home. Whatever the origin may have been it became customary, and custom is hard to break, in China. There is a Chinese proverb which says: "a pail of tears for every bound foot." There is an impression that foot-binding is only practised by the wealthy families. In our travels in out of the way places in the region of Canton, it was a common sight to see peasant women with feet so tiny that while they were carrying loads with their bamboo sticks over one shoulder, it was necessary for them to carry in one hand a staff to help their balance. During my frequent visits to the various hospitals there was opportunity to examine these bound feet. The entire weight of the body seems to fall on the metatarsal bone of the great toe, the remaining metatarsal and the tarsal bones are so pressed together as to render it difficult to distinguish their outlines. There is in my possession a pair of shoes which were given to me by the wife of a Mandarin, a patient who was operated upon for vesical calculus. These shoes are but three inches in length, though the woman was well formed in every other respect, being of more than the average size of Chinese women.

In former times a Chinese gentleman refused to marry a girl unless her feet were bound, but today they are beginning to refuse the girl whose feet are bound. This will be a more effective measure against foot-binding than any imperial edict.

In Soochow there is a medical school established 20 years ago, and now in connection with the Soochow University. Dr W. H. Park has charge of the men's hospital and Dr M. H. Polk the hospital for women. After the establishment of the women's hospital the ladies joined in carrying on the school and two sets of certificates are used for graduates, one in the name of the men's hospital and one in the name of the hospital for women, the work in other respects being the same for both. The course of study has extended over five years and the graduates, scattered over various parts of the Chinese Empire, maintain themselves so well as to give the school a most excellent reputation. The Tooker Memorial Hospital, a woman's hospital, in Soochow, is in the charge of Dr Frances Cattell. The year previous to my visit there were over 5,000 dispensary cases and about 100 in-patients. Not far from the city of Ningpo is a place called Yu Yiao. It is in this region that there is a great population, in the neighborhood of a million, without the advantages of a hospital or foreign medicine science. There is scarcely any opportunity in the world for more effective philanthropy than the building up of such work in this district. We returned once more to Shanghai, then took a steamer for a journey of 600 miles up the Yangste river to Hangkow stopping on the way three days at Nanking. The journey from Hangkow to Peking, 750 miles, is made by an express train in 40 hours. Within a few hours ride of Peking we stopped at the city of Paotingfu. Here are two hospitals, one the Hodge Memorial Hospital for women, conducted by Dr Maud Mackey, and the Taylor Memorial Hospital for men, conducted by Dr Chas. Lewis. Dr Lewis was at the time on his furlough in America. Dr Mackey gave many interesting accounts of her work and told of some of the expressions of gratitude from the 80 or 90 patients who daily frequent the dispensary, or are patients in the hospital. One woman sent a thousand eggs to show her appreciation.

It is appropriate that in the capital city of the great Empire of China there should be established a center for medical instruction. The various missionary bodies, instead of endeavoring to carry on their work separately, have united, and as a result have established the Union Medical College of Peking. The new college building was dedicated in February, 1906, in the presence of the representatives of the Empress Dowager, of the Princes of the Imperial House, of the foreign powers and officials of the various boards. The building and equipment cost over $50,000 of which the Chinese contributed over one third.

There is a lecture room and teaching accommodations for over 300 students, the idea is to admit 70 to 80 per annum for the course which covers five years, of nine months each. In the hospital 40 to 50 patients can be accommodated. It is planned to build a second hospital close at hand and devote the whole of the present buildings to college work. In the meantime the rooms which are destined for lecture rooms can be utilized as dormitories or wards for patients. There were 200 applicants for admission, 40 of which were received in the first class. The course of study is arranged so as to teach the fundamental branches in the first two years by lectures and laboratory work and to give training in medicine, surgery and the specialties during the last three years.

It is expected that in the last three years the students will assist in the wards, clinics and operating rooms. In addition to the hospital attached to the college the other mission hospitals and dispensaries in the city are open for the clinical training of the students. Government diplomas will be conferred upon those students who succeed in passing the final examinations. The faculty consists of 12 American and English physicians and about the same number of lecturers, all men of the highest standing. Of all the work in China, this seems one of the most encouraging for the future high standing for medical education.

In the West Shantung Province we visited Tsing Tau, Weihsien, Chinanfu, and Chingchowfu. The medical progress here is much the same as that described in the other cities and here also there is an effort to bring to a better completion an organized union medical work. Dr Arthur Smith says that China has made relatively more progress in the last five years than any other nation in the world. In Nanking we saw a little temple with the following inscription on it: "This is a little temple but a mighty big god dwells in it." Unconsciously, perhaps, we in America have had a poor opinion of the Chinese and their abilities. China now bids fair to outdo her teachers in all those things in which she was most backward. What would do for China asleep would not do for China awake. Our efforts to do our share towards her medical progress are still inadequate, but we hope the near future will show an awakened interest.

(Concluded in November issue)

European Eye Clinics

By LEO WOLFENSTEIN, M. D., Cleveland

The American clinics in the east probably furnish better opportunities for practical work in ophthalmology than one can obtain anywhere in Europe. But along strictly scientific lines the European, especially the German, clinics are as yet our superiors.

Of the continental cities Vienna is still the Mecca of the American physicians who come to Europe to study. This is partly on account of the fame of the old university and partly because the principal clinics are so conveniently situated within one large building, the Allgemeines Krankenhaus, so that one can see a great deal in many departments with little loss of time. Moreover there is an American Medical Association to assist those who are unacquainted with the German university system and are not proficient in the German language. In addition to this, almost all the professors, docents and assistants speak something which they claim to be English and which an intelligent American can learn to understand within a week.

The principal eye clinics in Vienna are also in the Allgemeines Krankenhaus. They are the first eye clinic (founded by Van Beer) now often spoken of as Jaeger's clinic, but at present under Prof. Schnabel, and the second eye clinic (formerly Arlt's) under Prof. Fuchs. The latter has about 24,000 new patients a year, fully double the number of the first clinic. There is a certain rivalry and jealousy between the two, which is said to be traditional, but nevertheless they are run in a similar fashion.

The American physicians, because they are a source of a great part of the income of the assistants, are *personae gratae* at all of the clinics, and generally have the privilege of visiting anywhere and following the entire work of the clinics. They also have no difficulty in becoming so-called voluntary assistants in any clinic they please.

In Fuchs' clinic there are five regular assistants and an indefinite but large number of voluntary assistants. Each of the former has charge of a ward of about 20 beds. The professor comes to the clinic at 8 A. M. and makes his round of the wards.

Read before the Ophthalmological and Oto-Laryngological Section of the Academy of Medicine of Cleveland, April 24, 1908

He then goes to the dispensary rooms (ambulatorium) and examines the cases which his assistants bring to him for consultation and advice. There are generally from 20 to 30 such cases. After he has given his opinion, the professor has all the new ones pass before him (generally from 60 to 80 in number), assigns them to the different departments, picks out those of especial interest and demonstrates to the crowd of assistants and other physicians around him the points to be noted. He then selects five or six cases to be demonstrated at his lecture, endeavoring to get such as will illustrate the part of the subject he intends to cover that day. At 10.30 A. M. the lecture begins.

First there is an explanation and discussion of the cases presented, which are demonstrated to the students by several voluntary assistants. This is followed by the regular didactic lecture lasting till noon. This course of lectures and demonstrations is a part of the regular university work and like all of the regular courses is cheap, costing only about 30 k. ($6.00) for the year. The lectures take place five times a week and are supplemented on Saturday by an illustrated stereopticon lecture on the pathology of the eye. The didactic lectures continue only about six months of the school year, the other three months being taken up by the so-called practicum. In this the professor brings in patients and calls down the students to make the examination and diagnosis and to indicate the treatment, etc. At noon the professor proceeds to the operating room in front of which there are usually 10 or 12 patients waiting. The work in the operating room is rather surprising to the American visitor. The asepsis is of a rather primitive nature. The operator and his assistants wear the same gray gowns in which they work in the dispensary, and which are changed about once in three weeks, whether they need it or not. All instruments, however, including the knives, are carefully sterilized by boiling. The patients not only walk into the room, but unless a general anesthetic has been given they get up and walk out, even after a cataract extraction. A general anesthetic is given comparatively rarely, and even enucleations are frequently made under local anesthesia. In Schnabel's clinic more care is taken with asepsis, the whole place is more neat and clean, and patients, after an operation, are removed in an ambulance. Prof. Fuchs operates for half to three quarters of an hour, finishing five or six cases, and then turns the rest over to his assistants. During the lecture time, the assistants are busy treating the out patients in the ambulatorium, while the voluntary assistants spend their time in taking histories (Americans are exempt on account of lack of familiarity with the language), doing refractions (such as they are), putting on bandages and other routine work. If a voluntary assistant remains more than six months he is given more responsible work and is rewarded by having operations assigned to him. Most Americans do not become voluntary assistants but simply observe the work and follow out and examine cases in which they are interested.

They also take private courses from the docents and assistants. These courses are limited by the American Medical Association to 10 members. They usually consist of 20 hours at 50 to 60 k. ($10.00 to $12.00) a course. At both clinics there are always courses on external diseases by some of the assistants. The cases presented are the pick of the clinics and every man has the opportunity of examining them thoroughly. The cases are then discussed as to diagnosis and occasionally something is said about the treatment. In one clinic or the other one can at any time join a course in ophthalmoscopy. In such a course of 20 lessons, one can see at least 150 interesting pathologic fundi, many of them representing rare conditions. At first one is inclined to think that rare cases abound in Vienna, but one soon discovers that the same cases appear in every course. Some of them have been attending the clinics for as long as 20 years. The best course in ophthalmoscopy was given by Prof. Elschnig of Schnabel's Clinic. He has lately received a call to Prag to fill the vacancy caused by the death of Czermak.

There are also courses on operations on the cadaver and pig's eye, on bacteriology of the eye, on the ocular muscles, on color-blindness, on optics, etc., but one of the most instructive of all is the one given by Prof. Salzmann on the histology and pathology of the eye. It is a course lasting three months, six lectures a week. Each man must stain and mount his own sections which he is permitted to keep. The professor goes over about 100 pathologic sections, giving as far as he knows the clinical history and appearance of the eye and fundus before enucleation and then explaining in detail the pathologic findings under the microscope. Prof. Wintersteiner in the pathologic laboratory also gives a good course on the pathology of the eye, and Prof. Tandler in the anatomic laboratory one on the gross anatomy of the eye and orbit.

In both clinics the work is done under unfavorable conditions, as the old Krankenhaus was built more than a hundred years ago and has no modern conveniences. The new clinics which are under construction will scarcely be finished within the next 20 years.

The most prominent of the other eye clinics in Vienna are: that of Von Reuss in the Polyclinic, that of Bergmeister in the Rudolfspital, that of Kunn in the Franz Joseph Ambulatorium.

In the German Empire everything is more progressive and modern, including the eye clinics. In Breslau under Uhthoff, in Munich under Eversbusch, in Hamburg under Deutschman, in Freiburg under Axenfeld, in Bonn under Saemisch and Kundt, in Zurich under Haab, etc., there are fine modern eye clinics doing excellent work. But in none of them can one obtain much instruction aside from the regular university work. In all of them Americans are treated cordially and can visit and observe the work *ad libitum*. They can even obtain assistantships provided they agree to remain a year or more. The material in these clinics is naturally small compared with those of the larger cities.

In none of the above mentioned places does one find many Americans except in Freiburg whither they are attracted by the fame of Killian. One always finds some of them in Axenfeld's clinic, where they can get private courses in bacteriology and pathology. The clinic is small, but the cases are studied thoroughly, especially in regard to the bacteriology of the eye. Prof. Axenfeld assigns some special line of work to every man under him and gives each man individual attention.

In Berlin one finds an increasing number of American physicians and the opportunities in all lines are good and improving. There is an Anglo-American Medical Association there. Compared to Vienna there is little instruction in ophthalmology and it is not a good place for a beginner.

In the Charité, Prof. Greef gives a combined laboratory and clinical course for 50 marks a month.

The Koenigliche Augenklinik under Prof. von Michel has about 17,000 patients annually. The professor gives a clinical lecture daily, this being a part of the regular university course.

American physicians are always heartily welcomed, are allowed the freedom of the clinic and when there is a vacancy, and provided that they speak the German language, they can obtain assistantships occasionally by applying to the professor and pledging themselves to remain at least one year.

Prof. Hirschberg has a private clinic of over 6000 patients annually, where all American physicians receive a hearty welcome and can do work.

Dr Fehr (Hirschberg's former assistant) has charge of the eye clinics of the new Virchow Krankenhaus. This, however, is located far out, while the other eye clinics are situated conveniently near one another.

On coming to England one at once feels oneself more at home. Everything is more American in appearance and spirit. Even the patients in the clinic are treated with consideration, as though they were human.. There are numerous clinics scattered all over London and it takes up a great deal of time going from one to another. The most noted eye clinic is at the Royal London Ophthalmic Hospital (commonly called Moorfields) where there are 400 to 500 out patients daily. The best known surgeons on the active staff were Messrs. Treacher Collins, Holmes Spicer, Gunn, Lang, Morton, Worth and Parsons. There are four surgeons on duty at 9 A. M. each day, each having his chief clinical assistant. They sit at high desks and the patients come up to them, the surgeons taking charge of the new cases and the chief clinical assistants of the old ones. Each patient has his card and paper. The latter is left at the office and given to the patient on his return. The surgeons are surrounded by their senior and junior assistants, to whom are assigned the patients after their histories have been taken and the surgeon has given them a cursory examination. The assistants are then permitted to examine the patients in any way they see fit and report back to the surgeon, who gives advice as to what the treatment is to be, and examines cases about which there is any doubt. But the assistants are permitted to treat their own cases. One can have the privilege of practising in the hospital for six months without any formality, upon the payment of three guineas, and upon application can be appointed junior assistant to one or more of the surgeons. After working there six months, one may be appointed senior assistant. All men who work at the hospital are at liberty to attend any operation. Most of the students spend the greater part of their time in refracting, to which more attention is paid in England than on the continent where most of the refraction is done much as the opticians do it here; our exact refractions being regarded as quite unnecessary and errors of less than one diopter being seldom corrected. Muscular troubles are regularly disregarded and heterophoria is called an American disease. On the Continent a woman will seldom wear glasses under any circumstances. In England they refract much better, but even there the precise American refraction is not regarded as necessary. The surgeons cut out a quarter or even half diopter cylinder on the ground that it makes no difference to the patient and that the simple spherical glasses are cheaper. A prominent surgeon in London remarked that the American nervous system must be more delicately constituted, since small errors of refraction never cause such disturbances among the English as those described by American authors. In Moorfields there is given three times a year a set of courses lasting about six weeks. Most of the courses are given in the evening. They cover such subjects as refraction, ophthalmoscopy, external diseases, pathology, etc. The cost of all the courses including a perpetual ticket for practising at the hospital is 10 guineas. But the courses are of a rather elementary nature. In some of the other London eye clinics one can get quite as good work as in Moorfields under less crowded surroundings. There are for example the large eye hospital at Charing Cross and the Ophthalmic Hospital on Gray's Inn Road.

For more detailed information regarding the work of the smaller clinics in Germany, I should refer you to a series of articles on the subject by Dr Horwitz, appearing in the *Ophthalmic Record*.

The Cleveland Medical Journal

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EDITORIAL

Requirement for Clean Milk

Milk is by far the filthiest food partaken of by man. The chief gross contamination is cow-dung.

Improperly cleansed milking pails, bottles, dust from the stables and dirt from the milkers' hands are other frequent sources of contamination.

The insufficient cooling of milk and the consequent multiplication of the bacteria introduced does the rest.

In 48 hours milk may contain as many bacteria as sewage!

Is it any wonder that the infant mortality in large cities approximates in one year 50%?

Is it pleasant to think of the nature of the fluid we are injesting even if purified by pasteurization so called? Dirty milk means dirtier cream, butter and cheese. What is the remedy? *Education* by the general practitioner; to do it effectively we must cooperate. Everyone should be willing to do his share, talk about it at home and in his private practice, write about it and do something about it for one day, or a week, once or twice a year, if not every day.

The standard of cleanliness of the milk of a city or a community is just as much an index of the intelligence and foresightedness of its citizens as is the proper disposal of its sewage or the purity of its water supply.

Every physician should take enough interest in the production of milk, not only for the sake of his own family and his patients, but for the community at large, to visit the dairy and farm once or twice a year from which he obtains his milk. After making one or two such visits let him visit a model farm and note the contrast.

Likewise taste the milk and learn once for all what it is that gives some milk a "Cowy" taste.

The following conditions are offered as a standard to which all milk dealers should approach:

(1) The herd should be examined and pronounced healthy by a competent veterinarian and should be tested with tuberculin by him at least once a year.
(2) The barn should be large, well ventilated and clean.
(3) The cows should be scrupulously clean and the udders and teets washed before milking.
(4) The milker should wash his hands with soap, water and a brush just before milking.
(5) The foremilk should be discarded.
(6) The milking pails should be scalded thoroughly or sterilized.
(7) The milk should be strained, and cooled to 40° within 15 minutes of milking and should be kept at that temperature until used. Milk produced under such conditions can be given to babies raw with perfect safety in the hotest weather.

Should any one of these fundamental requirements for the production of clean milk be omitted, it had better be pasteurized.

Experience has shown that milk produced under the best hygienic conditions and kept cold will not deteriorate in weeks.

Bodily Weight and Longevity

The influence of overweight and underweight upon vitality is usually not sufficiently emphasized and as a rule we fail to realize its importance and the dangers which beset those who are far removed from the correct standard of weight. Unless there is a very marked variation in weight of an individual from what would be normal as compared with the age and weight it is seldom taken into account except by insurance companies in estimating the probable duration of life in the case of an applicant for life insurance. Some very interesting data have been collected by Symonds (*Medical Record,* Sept. 5, 1908) from the mortality records of one of our largest insurance companies.

The correct weight of a person as compared with his age and height has been determined by tabulating the measurements of large numbers of applicants for insurance and taking averages. As an example of the accuracy of these tables it was found that one, compiled from the measurements of 74,162 accepted male applicants when compared with another from 133,940 similar cases, agreed in 111 out of 112 possibilities.

Overweight is considered a departure of 20% or over from the average normal weight and as this percentage increases so does the mortality. In younger people below 30 years of age overweight is not nearly so detrimental as in those above this age, since in young persons it seems to offer some protection against tuberculous processes and in many cases the weight remains stationary as the age increases. In these latter instances the percentage above normal weight therefore becomes steadily less and more nearly normal since the average person will steadily gain in weight with advancing age.

Underweight so long as it does not exceed 20% below the standard seems to produce but small effect and even among those who are not more than 30% below the standard the mortality is not excessive. Underweight in the younger ages is of more concern than overweight in the same ages and also it is more detrimental than underweight in those over 30 years of age. The association of dyspepsia or a tuberculous family history in people below the standard of weight adds to the seriousness of the proposition, possibly because they may at the time of examination have an unrecognized tuberculous process.

In looking over the causes of death in this class of cases, upon the whole overweight proves more dangerous than underweight. Those above the normal weight seem to possess a marked degree of immunity to tuberculosis but they are five times as liable to diabetes as those below the standard. The relatively large number of fatalities from carbuncle in the overweight class may be due to the existence of unrecognized diabetes. The liability of those below the standard weight to tuberculosis has been already mentioned, there are also twice as many fatalities from pneumonia among them as compared with those who are overweight. Digestive disturbances, hepatic cirrhosis and Bright's disease are more fatal to those overweight, probably due to their greater intemperance in the matter of food and drink. The overweight class are therefore much less desirable as insurance risks than those who are below the standard of weight, as the writer says: "The old idea that an overweight had a reserve fund to draw upon in case there was a run on his bodily bank was prevalent, although it was recognized that excessive fat might be harmful and should exclude the risk, on the ground, perhaps, that it was a form of capital which was not active. Similarly, an underweight was considered to be undercapitalized, and if his bodily bank had to go through a panic like pneumonia, or hard times like organic heart disease, he would become insolvent and bankrupt. As a result of this method of thought, our underweight mortality is rather better, and our overweight mortality rather worse than if both sets had been accepted under exactly the same conditions. But, even if we make full allowance for the difference in selection, I am convinced that the same percentage of overweight is a more serious matter than if it were underweight. The excessive weight, whether it be fat or muscle, is not a storehouse of reserve strength, but is a burden which has to be nourished if muscle, and which markedly interferes with nutrition and function if fat. This does not apply to the young, those below 25 years of age. Here a moderate degree of overweight is much more favorable than underweight. In fact, up to age 25 an overweight not to exceed 10% of the standard is upon the whole good for the individual. It seems to indicate a certain hypernutrition and robustness of physique which is favorable to the subsequent life. Underweight among these young people, on the other hand, is unfavorable, and in some cases indicates commencing disease or the tendency thereto. But when we pass the age of 30 these conditions are reversed and the difference between overweight and underweight in their influence upon vitality becomes more marked with each year of age."

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Serumtherapy: In the *Proceedings of the Royal Society of Medicine* for June, E. C. Hort states concerning the internal administration of horse serum (normal) that in the past 14 months he had been directly responsible for the administration of more than 50,000 c.c. in over 150 cases of different diseases. His experience showed: (1) Its action when given internally was more restricted than when applied locally; its mode of action in the former could be indicated at present only by its more easily observed action in the latter. In this it seemed to combine a stimulant action, with the paralyzing influence it could be demonstrated to exert on autolytic and heterolytic enzymes. (2) It might be given by the mouth for weeks in daily doses of 30 c. c. to 40 c. c. with impunity but it must be fresh and sterile and should be given directly after food when absorption is at its height. If these conditions were observed the collapse, serum rash, pyrexia, and other by-effects noted by Latham would not appear. (3) In such generally infective conditions as pulmonary tuberculosis and pneumonia, it was apparently of little value. He has had little experience in giving it with tuberculin. (4) In many cases of so-called simple anemia, a rapid rise of hemoglobin and corpuscular content followed its internal administration, though in pernicious anemia it was useless. (5) In hemoptysis, purpura, hemophilia and the hemorrhage of typhoid ulceration, it was often of very material benefit. (6) In such conditions as chronic gastric and duodenal ulcer, ulcerative colitis, extensive varicose ulcer, etc., it was with few exceptions of high value. (7) When applied locally in the form of constant dressings in such chronic conditions as surgical tuberculosis and staphylococcus infections it gave excellent results. It is beyond dispute that the normal serum of many animals, including man, and notably that of the horse, has strong antitryptic, and antiautolytic power. By administering serum, as in the cases referred to, we are of course transferring this protective body to the seat of cell-destruction; the clinical effects are significant and may explain many hitherto unexplained conditions of which non-bacterial ulcerations of all kinds seemed to be good examples. In bacterial lesions, the effect of the serum appeared to be, amongst other things, stimulation to repair, and inhibition of bacterial proteolysis.

Self-Repair: In the *American Journal of the Medical Sciences* for July, S. J. Meltzer treats of the therapeutics of self-repair. He asserts that therapeutics is the most important part of medicine, and the fact that the living organism is provided with means of self-repair does not relieve us of the duty to strive to discover, and procure also, artificial remedies. Evidently nature's store of reparative agents is insufficient, otherwise there would be no suffering and no premature deaths. The study of immunity means the study of the natural therapeutics of the body, with the view of employing it artificially also, and when possible improving upon it: for the new therapeutics quickly taught us to improve upon the body's method to provide with passive immunity when active immunity failed. The therapeutics based upon this new lesson from nature has already attained great success, as in the use of the diphtheria antitoxin, and recent experimentation has established the practical efficiency of an antiendotoxin, the serum for meningitis. It is his impression that its practical efficiency is as good as that of diphtheria antitoxin, if not better. The fact, then, of spontaneous recovery of the organism from disease can be and has already been utilized with great profit in favor of scientific and practical therapeutics. The fact of spontaneous recovery has frequently been utilized as an argument against the use of any artificial treatment, and if the usefulness of any treatment was admitted, it was that of physiologic therapeutics, that is to improve during disease the conditions which the body requires during health. We have learned, however, that there are methods of treatment which, in contradistinction to the term physiologic therapeutics, may be designated as pathologic therapeutics; that is the employment of methods of treatment along the lines which the organism institutes during disease in its efforts of defence and self-repair. Pathologic therapeutics promises to be the most efficient method of studying therapy.

Venesection: Judson Daland, in the *Journal A. M. A.* for August 29, states that venesection in cardiovascular affections, while referred to by many authors, receives scant attention in actual practise. He believes that venesection has become neglected, first, because of inherited prejudice due to its indiscriminate and unjustifiable use years ago, when it was the fashion to bleed healthy individuals each spring; second, to the fear that the abstraction of blood would weaken one already diseased; third, to the objection to its use by the laity, who are prone to believe that if death subsequently occurs, it is due to blood-letting; fourth, to a failure on the part of many physicians to recognize clearly the indications and limitations of this procedure; and fifth, to the erroneous belief that a small, weak, rapid pulse is an absolute contraindication to blood-letting. In mitral stenosis accompanied by extreme right ventricular dilatation, with failure of compensation, venesection is of great value and often prolongs life. In acute pulmonary edema, symptomatic of right dilatation, even when the patient is almost moribund, venesection often induces marked palliation and sometimes recovery follows. In well-marked degeneration of the myocardium, venesection is useless. In failure of compensation, in the course of arteriosclerosis, blood-letting is frequently of great value. In aneurism of the arch of the aorta, dyspnea or pain may be temporarily relieved by abstracting eight or ten ounces of blood. A not uncommon cause of death in acute croupous pneumonia is extreme dilatation of the right heart due to the obstruction in the pulmonary circulation by the consolidated lung. When, then, the symptoms and signs of right heart dilatation show themselves, venesection to the extent of 20 or 24 ounces becomes not only a palliative measure of great value, but occasionally saves life. A weak radial pulse in croupous pneumonia, under these circumstances, is not a contraindication but, on the contrary, a strong indication for its performance.

Morphin: West, in the *Therapeutic Gazette* for August (Practitioner) states, concerning sleeplessness in acute pneumonia, that if in the adult 24 hours are passed absolutely without sleep, something must be done to give rest or the patient will die of exhaustion. If ordinary remedies fail, and we cannot waste much time in trying them, we are driven to consider the question of morphin. Narcotics of any kind have to be used with great discrimination in pneumonia, if they are not to do more harm than good. The great objection to them is that they diminish the sensibility of the respiratory tract and thus check cough and expectoration. Yet when the patient cannot sleep, sleep must be given, and if ordinary remedies fail, nothing seems left but morphin, and the greatest benefit is often obtained from it. The author guides himself in its use by the amount of secretion in the air tubes. The cases in which it should not be used are those in which there are signs of congestion in the non-consolidated parts of the lung. Such cases are practically always fatal, and morphin simply accelerates the end. When the rest of the lung is not congested, that is, when it shows no signs of bronchitis, morphin may be given without risk and with great benefit. If it is decided to use it, it is best given in the most effective and certain way, that is by subcutaneous injection and not by the mouth. When a patient is at last got to sleep by morphin, the sleep is very profound. It may be so deep that the suspicion may arise that the apparent coma is due to morphin, but with the doses used coma is impossible, and the deep sleep is simply that of exhaustion.

Cocillana: Samuel E. Earp, in the *Central States Medical Monitor* for August, writes concerning cocillana, about which information is not abundant, and much of that which we have is not particularly clear. From the bark of a tree of South America there is furnished a bitter and astringent principle which seems to exert a favorable influence upon some of the diseases of the respiratory organs. In this respect possibly it closely resembles ipecac and also in producing nausea in case the doses are not gauged cautiously. In certain respiratory diseases he has found that expectoration was more easily accomplished. The cough was generally less violent, and he found heroin, and codein valuable adjuvants. In tuberculosis the amelioration of the cough was more pronounced than when codein or heroin were used independently. The lingering cough which frequently follows some of the acute infectious diseases is very often benefited by the use of cocillana. In tuberculosis he found it to yield some relief and a case of asthma and two of chronic bronchitis seemed benefited. His experience with it in combination with heroin in whooping cough warrants him in advising a further trial in this disease. He notes the similarity in the action of ipecac and cocillana, but believes the latter rather the better expectorant. It furnishes bile by its action which produces catharsis. In some cases he has found that its long continued use produces nausea and especially when the doses are too large. He feels certain that it is best to use small doses often repeated. What we may expect from ipecac, and all other expectorants, may be obtained by the use of cocillana. Omitting ipecac, it may prove superior to any of the expectorants from the fact that it produces relaxation in a mild degree. Its action on the bowels and liver favors elimination and it also has the other points of advantage desired in the physiologic and therapeutic action of an agent, from which we expect favorable action in certain diseases of the air passages.

Formaldehyd Derivatives: Torald Sollman, in the *Journal A. M. A.* for September 5, concludes concerning the action of the formaldehyd derivatives and their fate in the body that: (1) The methylene radicle is transformed very readily into formaldehyd with some compounds; with much more difficulty or not at all with others. (2) The formaldehyd thus liberated is completely oxidized in the human organism and does not exert any antiseptic action on the urine. (3) Formidin is neither decomposed nor absorbed to any appreciable extent in the intestine. (4) Hexamethylenamin is the only reliable urinary antiseptic (by mouth) of the various substances tried. The salicylates (sodium salicylate, salol, novaspirin) have a distinct but much inferior preservative effect. The following are practically useless: boric acid, citarin, formidin, iodomuth, sodi-forma-sal, sodium benzoate, and sodium phenolsulphate, tannopin, tannoform and ur-a-sol. (5) As intestinal antiseptics the most efficient drugs appear to be bismuth subnitrate and creosote (also novaspirin and ur-a-sol). These are closely approached by tannoform and iodomuth. Distinctly inferior are formidin, salol, guaiacol carbonate, glutol and tannopin. Guaialin appears nearly useless. (6) As relatively insoluble wound powders, the greatest antiseptic power appears to be possessed by betanaphthol, boric acid, iodoform, quinin sulphate, and xeroform. These are closely approached by acetanilid, bismuth subnitrate, and orphol. Somewhat inferior are chloretone, formidin, iodoform, and ur-a-sol. Distinctly inferior are glutol, guaiacol carbonate, tannoform, tannopin, tannin and salol. Not antiseptic are cerium oxalate, charcoal, chalk and zinc oxid. (7) Of all the products examined for antiseptic value, the hexamethylenamin is the only one which offers undoubted advantages over the older antiseptics. This statement is not intended to reflect on the antirheumatic value of the salicylic products, or on the astringent value of the tannin products.

Exophthalmic Goiter: In the *Medical Review of Reviews* for July, Lancereant and Paulesco (Bull. del'Acad. de Med.) recommend quinin for the treatment of Graves' disease, upon the basis of their experience with the remedy for several years. It is administered in an amount of one and one-fifth gram at night, divided into two or three portions, to be taken at intervals of a quarter of an hour, treatment to be continued during 15 to 20 days of each month. The effect is prompt and remarkable, all the symptoms of the disease rapidly subsiding except the goiter, but this will diminish in size up to a certain extent. In long standing cases the combination with ergotin is advisable. Provided the treatment is carried out with the necessary persistence, the cures are claimed to be permanent. The cases treated all presented typical symptoms of the disease. A drop of temperature and disappearance of the palpitation followed the administration of the quinin. The remedy also had a decidedly favorable effect upon the exophthalmos, the vasodilation and the general nervousness of the patients.

Bromural: O. Hensel, in *Merck's Archives* for July, writes concerning somnifacients, that there has seemed to be a gap between the simple sedatives and the real hypnotics, which has only recently been filled by bromural. Though the name suggests a bromin compound, the physiologic action does not depend upon the bromin present in the molecule and the sedative properties are much stronger than those of the bromids. Numerous animal experiments have conclusively proved that bromural is almost harmless, and that respiration is affected only after the administration of large doses. It is a white crystalline powder, with slightly bitter taste. He reports its value in two cases of morphinism, in which after the withdrawal of the drug the usual remedies gave but little relief. Bromural was then tried in rather large doses, 10 grains every two to three hours, with the result that the patient passed a comfortable day, and slept without the use of veronal. For convenience the five grain tablets were prescribed in both instances. They should be taken with a hot drink, so as to insure their rapid solution in the stomach. Bromural has also proved of service in a number of minor complaints. In general pruritis, as in elderly individuals, 10 grains of bromural three times a day gave relief and sleep. Good though not quite so prompt results were seen in the itching of urticaria, and other skin diseases. In chordee it was found of value, and while tried in epilepsy, sufficient time has not elapsed to decide if it possesses any advantage over the bromids. In conclusion bromural is warmly recommended to the profession in all cases in which a virtually harmless nerve sedative more potent than the bromids is desired.

Hexamethylenamin: A. G. Christian, in the *Medical Record* for August 15, calls attention to the fact that in 1907 he reported several cases of typhoid fever treated with formalin with recovery in about two and one-half weeks. Since then, finding the solution of formaldehyd in water rejected by so many stomachs, he has been using hexamethylenamin with good results. The duration of the cases is three or four days longer than it is in those cases which bear formalin well. In his experience, this drug has appeared to shorten the disease by one or two weeks. It keeps the temperature in check about 103°, prevents diarrhea and distention, seems to prevent delirium and keeps the patient comfortable. He believes that the use of this drug with regular, at least daily, high irrigation, will reduce the average duration of typhoid fever to two weeks. Its use must be begun early in the disease. He thinks the profession is not sufficiently alive to the value of the drug.

Solanin: Clayton M. Thrush, in the *American Journal of Clinical Medicine* for July, writes concerning solanin, as the result of an extensive use of this drug, that unless the dosage be carried until the cortical centers are affected, which is evidenced by a condition of drowsiness and stupor, the results will be disappointing. This is absolutely necessary to thoroughly impregnate the nerve cells and obtain a hoped-for cure in epilepsy. Solanin is to be decidedly preferred to the bromids in those cases in which it can be used advantageously because no toxic symptoms follow its free administration and the mental faculties are not impaired by its use. It is of the greatest value in grand mal of idiopathic type and without hereditary taint and when the disease has begun beyond childhood it is better than any other known remedy. It is next of greatest value in hysteoepilepsy with marked convulsive seizures. In cases of petit mal the results are not as satisfactory. He advises giving solanin granules 1-67 grain, one every hour, increasing every second day one granule at each hourly dose, until the fullest physiologic effect is obtained, then reduce the dose to one-half of this amount and continue for long periods, there being no cumulative action.

Book Reviews

A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A. M., M. D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Fifth edition, thoroughly revised. Octavo, 806 pages, with 431 illustrations, of which 75 are in colors, and 20 full-page colored plates. Cloth, $5.00 net; leather, $6.00 net; half-morocco, $6.50. Lea & Febiger, publishers, Philadelphia and New York, 1908.

Dudley's Gynecology is already so well known to the profession as hardly to require review. This volume, however, shows a number of changes and additions over the former edition, which brings it thoroughly up to date. Several chapters have been entirely rewritten and a number of new illustrations inserted. The fact that five editions have been found necessary within a few years speaks well for the success with which the book has met. The introductory chapter, which appears for the first time in this edition, is a most vigorous defense of the existence of gynecology as a specialty and is an answer to those who argue that since the gynecologist has widened his field so as to practically include all abdominal surgery, he has really become a general surgeon and therefor the general surgeon is as fully equipped to do gynecologic work as the special worker in that field. The author believes that the important branch of plastic gynecology has been rather neglected of late years and that this line of work, in which the early gynecologists first scored their successes, should receive more attention than it does. These procedures are therefore fully detailed in the text.

The arrangement of the book is the same as in former editions and considers the various diseases more from their etiologic and pathologic standpoint than from their occurrence in any particular location, thus gonorrhea is discussed as an entity and not described in several chapters under the headings of the different organs in which it may manifest itself.

The author has devised a number of operative procedures and while these are carefully detailed due prominence has also been given to other methods of accomplishing the same ends. Non-operative and conservative operative treatment has been given due consideration especially in the case of ovarian and tubal lesions. The tabular arrangement of the points in differential diagnosis will appeal to the student and tends to impress these facts upon the memory.

The numerous and excellent illustrations, especially the plates showing the different steps of various operations, are of decided value. The work can be heartily recommended as one of the best textbooks upon the subject.

Pulmonary Tuberculosis and all Complications, by Sherman G. Bonney, M. D., Professor of Medicine, Denver and Grosse College of Medicine, Denver. Octavo of 778 pages, with 189 original illustrations, including 20 in colors and 60 X-ray photographs. Philadelphia and London, W. B. Saunders Company, 1908. Cloth, $7.00 net; half-morocco, $8.50 net.

The subject of pulmonary tuberculosis in the broadest sense is most thoroughly treated in this admirable work, which represents to a great extent the extensive personal experience of its author. It is considered mainly from the clinical viewpoint, and the practical side of the subject is especially emphasized, presenting a most satisfactory survey of the disease and its manifold complications. Etiology and pathologic anatomy comprise about 80 pages. The chapter upon racial influence presents not only the facts regarding the Negroes and Indians, but considers such within the confines of the white as well, noting the relative immunity of the Jewish people, the great susceptibility of the Irish, and the varying death rate of our other national factors in this regard. About 150 pages are devoted to treatment, stress being placed upon attention to infinite detail and while, of course, open air and hygiene are emphasized as essential factors, and the routine administration of drugs is deprecated, he enters a protest against the prevailing tendency to decry the value of all medication in this disease. His estimate of such therapy appears eminently judicious. He believes the intelligent use of a few well selected remedies to meet varying exciting needs to be by all means indicated. Drugs find a suitable place in managing special symptoms but the indications for general drug therapy are extremely few. As to creosote, he most emphatically condemns its general use, impressing its restriction to intractable cases of gastric and intestinal fermentation with impaired appetite, chronic bronchitis, etc., and having but little confidence in its practical value for inhalation. In hemoptysis, rest in a fixed position is insisted upon, while, as regards drugs, his experience with the chlorid and lactate of calcium has not been satisfactory. He believes, however, that the clinical value of the nitrites and nitroglycerin seems to be established and of these the amyl nitrite is the most prompt. Morphin, however, is in his opinion the most important agent in pulmonary hemorrhage, and atropin is of value especially in the most urgent cases, and in good sized doses as 1-50 of a grain. Normal salt solution cautiously employed he has found valuable after profuse hemorrhage. As to specific treatment, tuberculin is quite fully considered, and opsonins as well. Concerning the latter the statement is made that "the role of the opsonic index in vaccine therapy still remains an experimental study," and further, "this feature should remain for the present *sub judice.*" The illustrations are excellent and the work is a splendid one throughout, complete and practical, and cannot be too highly commended.

The Principles of Pathology. Volume 1, General Pathology, by J. George Adami, M. A., M. D., LL. D., F. R. S., Professor of Pathology in McGill University, Montreal. Octavo, 948 pages, with 322 engravings and 16 plates. Cloth, $6.00 net. Lea & Febiger, publishers, Philadelphia and New York, 1908.

The volume under consideration is of especial interest in that it shows certain more or less wide departures from the accepted form of textbooks on pathology. Appreciation of the magnitude of the subject has driven the author to divide the work into two volumes, of which the first deals only with subjects coming under the head of general pathology, while the other is to deal with systematic pathology. Whether the increased size of the work and the consequent increase in price will prevent wide use of the book cannot be accurately foreseen. As against these disadvantages can be placed the compendious nature of the information. The first 130 pages are devoted to pure cytology, giving an excellent summary of the present status of knowledge, followed by an extensive outline of the theories concerning heredity and such proofs as we have. This information, unnecessary perhaps when good preliminary courses in biology and cytology precede the medical curriculum, leads up to heredity of pathologic conditions or tendencies, with its relation to the various monstrosities. As am example of the detail characteristics of the book, it may be noted here that the mode of formation of twins, etc., is carefully diagrammed so as to be clear to anyone, without necessary reference to books on embryology.

General parasitology, followed by the various forms of intoxication, together with portals of entry and predisposing causes, precedes the study of inflammation. This begins the third main section of the book, that on morbid reactive processes. A full historic and critical summary of immunity follows upon inflammation. Contrary to the usual procedure, it is at this point rather than earlier that the progressive and regressive tissue changes are introduced. The author has his own ideas on classification and arrangements of tumors, and it is difficult to say without careful comparison whether the already complex subject is clouded or clarified by his method. He is, however, in this subject as well as in others in which he differs from the usual teaching, diffident in urging his own schemes, and careful to note for the student's benefit how and why the variations occur. A final appendix deals with recent work on finer cytology and brings the book to date in that line.

The main impression given by the volume as a whole is one of extensive reading, with the information of the present day brought into moderate compass and expressed with great clarity. The allied subjects of physiology, chemistry, embryology, etc., are discussed with unusual fullness where they touch on pathology, with the view that these all are not individual lines, but part of one and the same great study. The book is perhaps too full for the ordinary student, though on the other hand it will reduce the required amount of side reading, always a difficult thing to induce students to do.

The form and type are excellent, and the typographic errors are not numerous. The illustrations appear adequate in spite of the author's loss by fire. In fact, the book seems one of very unusual value, and the new method of presentation will stimulate inspection of the subject of pathology from a greater number of directions.

Medical News

George F. Thomas announces the removal of his office to 1016 Rose Building.

R. G. Perkins has been appointed Associate Professor of Pathology and Hygiene and M. W. Blackman has been made Lecturer in Histology and Embryology at the W. R. U. Medical College.

George N. Stewart, Professor of Experimental Medicine at W. R. U., has recently returned from abroad and takes charge of the new laboratory which is to be opened November 20. Prof. W. H. Welch, of Johns Hopkins, will deliver the opening address upon this occasion.

The cornerstone of the new German Hospital at 3305 Franklin Avenue was laid on Sunday, September 27, by Rev. J. S. Kosower, Superintendent of the Hospital.

A number of students desire an opportunity to earn money wherewith to defray the expenses of their collegiate training. They do not seek charity or gifts but a chance to give services for value received. Without work of this sort many of them will be unable to continue their college course. Anyone who can furnish employment of this sort, even if of a temporary character, should communicate with Dean C. Mathews of Adelbert College, Secretary F. C. Waite of the W. R. U. Medical College, or Dean R. E. Skeel of the Cleveland College of Physicians and Surgeons.

St. Alexis Hospital Alumni Association met September 3. The program was as follows: Treatment of Rheumatism, A. J. Prudhomme; Report of Case of Diabetes, B. S. Frary.

Stark County Medical Society met Tuesday, September 15, 1908, at one o'clock at the City Hall, Canton, Ohio. The program was as follows: Lectures, ''Normal Mentation,'' H. C. Eyman; ''Gastro-Intestinal Diseases of Children,'' W. H. Becher; ''A Plea for the Family Physician,'' H. E. Corl. Case Reports, Abscess of the Thyroid and Diabetes, J. E. Shorb; Purulent Meningitis as a Sequel to Suppurative Appendicitis, P. F. King; Ileo-Colitis, D. F. Banker.

Sixteenth International Medical Congress. The members of the medical profession are reminded that contributions to the Congress must be announced to the Secretary before January, 1909. It is desired by the Committee that the manuscripts should be in their possession by January 31, 1909. It should be known that the time for the reading of a paper does not exceed twenty minutes and that manuscripts should be clearly written, as the correction of the proofs is attended to at the office of the General Secretary. Copies of the manuscripts will be returned by July 31, 1909. The General Secretary is Professor Emil Grosz, M. D., the address, Budapest, VIII., Esterhazy-uteza 7. Blank forms of application for membership to the Congress and for the presentation of papers can be had of the Chairman of the Committee, J. H. Musser, M. D., 1927 Chestnut St., Philadelphia, Pa.

Deaths

M. F. Warner, this city, died August 29, aged 59.

A. L. Snyder, of Bryan, O., died August 14, aged 80.

Henry A. Tobey, of Toledo, died August 18, aged 56.

Harvey D. Danford, of Trimble, died August 21, aged 63.

Russell R. Smith, East Liberty, died August 30, aged 64.

J. I. Baker, of Rock Creek, O., died recently, aged 81.

Daniel T. Black, of Fort Jefferson, O., died September 1.

F. W. Rose, of Jamestown, O., died September 3, aged 55.

Chas. E. Bailey, of Greensburg, O., died September 3, aged 40.

Henry McGrew, of Pleasant Ridge, O., died September 6, aged 62.

Z. T. Houseman, of Fostoria, O., died September 12, aged 59.

John G. Howell, of Freeport, O., died September 13, aged 41.

John Q. Southard, of Marysville, O., died September 18, aged 78.

Jas. A. Macready, of Monroe, O., died September 20, aged 73.

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Experiences with the Cutaneous Tuberculin Reaction and the Findings in Two Hundred Postmortems on Children

BY CLEMENS VON PIRQUET, M. D.,

Assistant to Professor Escherich, Director of the Pediatric Clinic, University of Vienna

The findings in the first hundred autopsies which were made on children, who had undergone the cutaneous tuberculin test, have already been reported. Now the second hundred has been reached. The cutaneous test originated in the following manner: I had found that in vaccination against smallpox only those persons show local symptoms within 24 hours who have formerly been vaccinated. One may, therefore, conclude if any early local reaction is obtained that the person has been previously vaccinated. In applying the method of vaccination to tuberculosis, I found that, in the same way, an early reaction at the point of vaccination with Koch's tuberculin proves a previous infection with tuberculosis, and that this cutaneous reaction corresponds to Koch's fever reaction after injection with tuberculin.

The first cases which I reported last year were nearly all tuberculinized by inoculating two of the abraded points with 25% tuberculin while the third was uninoculated and acted as a control. This year nearly all were vaccinated with undiluted old tuberculin. The test was generally made on the right arm, sometimes on other parts of the body, although the place of application is not important.

In several cases besides the cutaneous test the conjunctival and the dermal applications were also tried. The conjunctival method of tuberculin application (Wolff-Eisner-Calmette test) I

Read before the Academy of Medicine of Cleveland, October 9, 1908 have quite given up, because in some cases a very disagreeable and lasting irritation results and besides the struggling of the children makes it difficult to apply the solution equally. The conjunctival test with a one percent solution of old tuberculin is not so sensitive as the cutaneous test with undiluted tuberculin; and it is not correct (as is said by some authors) that the conjunctival phenomenon appears only in persons with an active progressive tuberculosis. The difference between the two reactions is of a quantitive nature only. If one applies a higher concentration of tuberculin in the eye, one finds the same percentage of reacting children among the latent tuberculous cases as with the cutaneous test.

A test to differentiate absolutely between active and inactive tuberculosis is very much to be desired, but with all the different methods of application of tuberculin a satisfactory one in this respect has not yet been discovered. In general, a newly acquired tuberculosis shows a severer reaction than one of longer standing, but this does not necessarily imply that the process is an active and progressive one. Only one thing is absolutely sure—that every positive reaction is caused by an infection with tuberculosis. One can not, however, conclude from a positive reaction that a coexisting bronchitis is necessarily due to tuberculosis.

The dermal reaction, which is produced by the inunction of tuberculin, following the method of Moro and Lignieres, is not so sensitive as the cutaneous test. In every case it is preferable to the conjunctival application, because it is absolutely harmless. It can be applied in cases in which the doctor or the patient do not like the vaccination method.

For consecutive or daily trials in the hospitals only the cutaneous test is applicable, because each test requires but a small spot of the skin, and furthermore it allows a quantitative measurement. Recently, in a number of cases, I performed daily inoculations with quantitative measurements in order to make continuous observations of the reactive power of the body in tuberculous meningitis and in measles.

Besides the above named methods of application, injections of tuberculin were made in many of my cases by Dr. Hamburger. His attention was principally directed to the subcutaneous reaction, Escherich's Stichkanalreaktion. He proved that the subcutaneous reaction is even more sensitive than the cutaneous one. It is often found that older children without manifest tuberculosis react better to the subcutaneous than to the cutaneous test. These children will generally react a week later to a cutaneous test also. This secondary reaction is due to the increased sensitiveness caused by the first application.

In the majority of cases the reaction was tried not only once but several times. I inspected the sores every 24 hours for some days. Each time a note was made of the diameter of the papule, also to what degree it was raised above the surface, and if it was distinctly, indistinctly, or not at all palpable. Lastly the color and other signs were noted when the papule was of an unusual type.

Out of about 2,000 children who had undergone the cutaneous test 200 died and were dissected carefully. The autopsies are to be divided into two classes. Those in which no tuberculosis was found, 109 cases, and those in which tuberculosis was found, 89 cases. Besides these there were only two cases which, at the autopsy, showed an uncertain result. The cutaneous tuberculin test in these two was positive. In one of these two children adhesions of the left lung and enlargement of numerous glands were found. In the second case a pericarditis was found, which had, however, no positive characteristics of tuberculosis.

The remaining 109 cases in which no tuberculosis was found all reacted negatively. Of the 89 cases, which showed tuberculosis at the postmortem, 60 were positive at the first cutaneous test and 29 were negative. Of the latter, six cases showed signs of a positive reaction at the site of the inunction test. Four cases, of these six, showed at the postmortem slight tuberculosis besides some other fatal disease, while the other two died of tuberculosis itself. One of those two cases is very interesting, because this child was from the time of its birth to the time of its death in the babies' ward. Some hours after the child's birth the mother died of consumption, and it is nearly certain that the child was infected from her immediately after birth, because the postmortem showed a tuberculosis of the glands of the throat and the lungs, and especially a cavity in the right apex. These findings speak more for an infection by the respiratory tract than for an intrauterine infection. For the first seven weeks the child was quite well, then commenced to show symptoms of fever and emaciation and died at the end of three months. The first cutaneous test, 23 days before death, was negative. The second, one week before death, was positive.

In several cases of the second group, namely that of tuberculous children, the reaction was negative because the test was made during an attack of measles. As I have already shown in some former papers this non-reacting stage begins at the same time as the exanthem and lasts for about a week. Afterwards a regular reaction reappears, if the measles has not caused a generalization of the tuberculosis. In such cases only a slight reaction reappears for some days, then fails with the progress of the milder tuberculosis.

Nearly all the remaining cases of tuberculosis which reacted negatively were instances of miliary tuberculosis. In young children, miliary tuberculosis has not much influence on the reaction, we found it positive even to the last days of life. The more grown the children are the sooner the reaction lessens in the last weeks before death. I have watched, in many cases, this lessening by making daily tests. In such instances the first test was positive, a distinctly palpable papule of a fresh color being found, then the height of the later reactions slowly diminished. We find "cachectic" reactions, as I call those which are abnormal either in height or in color. Sometimes one finds distinctly palpable papules but with no color, and on the other hand distinctly colored ones which are not elevated. Whereas normal papules retain their shape and height for some days, cachectic pauples often change in color and height, sometimes it seems as if they disappeared and the next day, or in some hours, they have reappeared.

From the foregoing we can conclude that in the first stage of measles no diagnosis is possible by the cutaneous test, but a week after the appearance of the exanthem the reaction is very useful, because in illnesses which occur after measles, especially bronchitis, it is very important to know if the individual is infected with tuberculosis or not. If the reaction is positive, one must be very cautious with the prognosis, as very often tuberculous germs develop after measles. Probably it is that stage of non-reaction which gives the opportunity to the germs to develop.

In cases of suspected miliary tuberculosis or meningitis a positive reaction speaks in favor of it, but, on the other hand, a negative reaction does not speak against it. It speaks with even more certainty for a miliary development if we find a negative reaction in a case in which we formerly found a positive one.

In very young children, as I said before, the reactivity lasts very long, in many cases even to death, whereas in more grown children, and especially in adults, the reactivity seems to cease sooner. In general, the conditions of reaction in adults are far more complicated than in infants. In infancy a positive reaction means great danger to life. Infections with tuberculosis acquired in the first six months of life seem to end nearly always in death. The older the child, the less dangerous the infection with tuberculosis seems to be.

In Vienna it is certain that the majority of more grown children and nearly all adults have a tuberculous reactivity due to slight infections which are limited to parts of the lungs or glands and do not cause any inconvenience to the patient.

The reactivity of such persons is in general a very slight one and they react only at a second application. This I call a "secondary reaction." But many of them have a greater reactivity, perhaps due to some slight reinfection, without their being in any danger. Only a very severe reaction at the first application has a significance in adults. It means that there has been some new process at work, although one can not conclude whether it is a slighter or severer one. A severe reaction in connection with a suspicious disease speaks for the tuberculous nature of the latter. On the other hand, a failure to react after repeated applications of tuberculin proves (except in measles or miliary tuberculosis, as said before) that the individual is free from tuberculosis, and makes it certain that a suspected disease is not tuberculous. In such cases, in which one wishes to exclude tuberculosis, instead of making several cutaneous applications, a quicker result is obtained if, after the first negative cutaneous reaction, one injects one mg. of old tuberculin and pays attention to the local subcutaneous reaction, as suggested by Dr Hamburger. The cutaneous test is of especial value during the period from birth to three or five years; during these years nearly all infected children react at the first cutaneous application. A slight and mild tuberculosis is at that age more rare than in older persons, complications of infection are also rarer, and, therefore, diagnosis and prognosis by the cutaneous test can be made in nearly all cases.

Malnutrition

By M. J. LICHTY, M. D.

A slight to considerable loss of weight, a pain somewhere, and a more or less general malaise and weakness are perhaps the three most common causes for alarm to the patient. Aside from the illness caused by infectious diseases, with their dangerous symptoms, most people consider themselves quite well so long as they are strong, of usual weight and free from pain. The cause of pain is a question always of importance and is a subject of much discussion and even excuse for the compiling of interesting volumes of reading both in current literature and in textbooks; but the cause of malnutrition, most usually associated with weakness, is an equally important subject. Its etiology is a serious question for the physician, and often quite a puzzling question also. Of scarcely less interest and importance is the subject of proper treatment after the cause is discovered. However, while many people are interested in the nature of their ailment, a great many more are infinitely more intested in the restoration of their health, with considerable interest of course in the means employed to restore this health. Hardly anyone will deny that what the patient is seeking most is a cure, indeed a "cure all." Irrespective of diagnosis the cure is usually the first, and sometimes the only question which concerns the patient.

To discuss all features of the etiology and treatment of malnutrition is certainly far beyond the scope of this paper, and were it not for considerable experience with quite a number of these cases, and some technical and trying experience with at least a few very interesting ones, I would not venture upon the subject at all. In passing though let me remind you of such common and serious causes as the infectious fevers, tuberculosis, malignant tumors, diabetes, venereal diseases, diseases of the nervous system, even diseases of the eye, together with impoverished diet, starvation, overwork, bad hygiene, bacterial infections, alcohol, and other poisons. To this list must be added those cases of malnutrition following diseases of certain viscera, as the heart, lungs, stomach, bowels, liver, kidneys, reproductive organs, and thyroid gland. Another cause of malnutrition, upon which I wish to lay especial stress later with report of cases, is that of arteriosclerosis, a cause easily and frequently overlooked until the disease is far advanced. Cases of malnutrition frequently come to all of us. The cause of this loss of weight and strength and rapid pulse seen so frequently are questions not always easily answered. Infectious and visceral diseases can of course be properly blamed for a great deal of malnutrition.

But so often the onset of the infection and more especially the onset of some visceral disease is so slow and insidious with so few positive symptoms or physical signs that the diagnosis becomes most difficult and uncertain, and often remains so for an annoying length of time. The speedy return to the former normal weight and nutrition which follows most of the acute infectious diseases is of course gratifying and frequent in the absence of any sequelæ. But such is not the case with malnutrition following chronic visceral diseases, arteriosclerosis, and nervous disorders. I shall limit the further discussion to the loss of weight likely to follow any one or all of the three conditions just named, and will report a few cases typical of each. In the class of chronic cases, which I meet most frequently in private practise and hospital work, are quite a number whose loss of weight follows either some gastro-intestinal disturbance, or arteriosclerosis, which of course has its effect upon both heart and kidneys, and the so-called condition of "nervous prostration." Taking these three common causes in the order named I will first consider that loss of weight which follows gastro-intestinal disturbances.

The effect which the abnormal secretions in the stomach and bowel have upon the body nutrition can be observed most frequently. It is a very difficult thing to maintain a perfect nutrition through impaired functions of the gastro-intestinal tract. The chronic catarrh of these organs, if the term be allowable, with perhaps a hyposecretion and atrophy of the mucous membrane, as well as the occasional catarrhal or more frequent nervous condition which causes a hypersecretion, together with the pronounced acute or slightly chronic ulceration of the stomach, gradually causes slight to considerable loss of weight. The symptoms alone of gastro-intestinal diseases are often misleading and most unreliable, but when one makes a careful study of both symptoms and physical findings the reason for the malnutrition is often very clear and positive. The stimulation of a gastric hypoacidity, the removal of a diseased appendix, the surgical treatment of the gall-bladder, the cure of a chronic ulcer with a carefully selected but liberal diet, often lead to a gratifying and sometimes remarkable increase or return of weight. When, however, one begins to treat these cases after a questionable diagnosis, and when one depends greatly upon the numerous and widely advertised digestive agents which flood the market, and leaves the selection of a diet mostly to the patient himself, the result is just as frequently very disappointing, and the patient passes out of observation. I will refer briefly to three cases as examples of some of these defects and of the satisfactory results.

CASE I: A housemaid, aet. 36, who previously had an attack of typhoid and several acute attacks of grippe, continued to lose weight and strength gradually for a whole year until she weighed 99 pounds. Her most annoying symptoms were a slight cough and gastric hypoacidity. She had a well marked atonic dilation of the stomach and two floating kidneys. The uterus and ovaries were negative. The menses had not appeared for four months. Without rest in bed and with a carefully selected diet liberal and forced in quantity, some bitter tonics, iron and arsenic and an occasional laxative, at the end of six months the menses returned, her strength improved and the weight increased from 99 to 115 pounds, which was very near her maximum weight at any time previously.

CASE II: Is that of a tall man, a broker, real estate agent, and promotor of industries, and an admirer of Venus. He has been under constant observation for the past five years. He was of neurotic temperament. His weight had been reduced from a maximum 180 to 140 pounds. He had attacks of syncope. He was alarmed about the condition of his heart, which was perfectly normal. He had constipation, insomnia, many gastric symptoms, and a marked gastric hyperchlorhydria with an occasional attack of vomiting. After trying symptomatic treatment for more than a year with only moderate improvement he was given a strict and prolonged rest cure or Mitchell treatment. The last two years his average weight has been between 190 and 210. Most of his symptoms have disappeared and his business capacity has increased remarkably.

CASE III: Is an example of chronic malnutrition, the result of perhaps more or less chronic ulceration, with dilatation, of the stomach which may have been present for years. Recently there was a very positive condition of an acute return of the ulcer. She was 27 years of age and a college student when she came under my observation in September, 1905. She is tall and has had a maximum weight of 135 when in good health. She gave a history of dyspepsia and constipation, which had existed for more than seven years. There had been attacks of vomiting. Some years before she was treated by systematic lavage of the stomach which gave considerable relief. There was no history of hemorrhages. When first seen three years ago she weighed 120. She showed upon examination considerable anemia, two floating kidneys, and a greatly dilated stomach. There was tenderness, but no rigidity over the ensiform region. The first gastric analyses gave a normal to subnormal secretion and acidity. The stomach contents were free from blood. The same condition was found in the occasional, subsequent, gastric analyses. She was treated symptomatically and with much benefit and comfort. She gained 10 pounds (weight 130) at the end of a year while at college. During her last college year however with heavier work, greater anxiety, and perhaps less care about rest, exercise and hygiene, she again began to lose weight. Her gastric symptoms became more pronounced and annoying. And upon her return in June, 1908, with a diploma from a university in the East, she weighed 110 and she had all the typical symptoms of gastric ulcer—pain, tenderness, rigidity, hematemesis, and a very constant finding of blood in the gastric secretions and feces. She was treated symptomatically with rest in bed and the Lenhardt diet for four weeks. In September she reported at my office when her weight had returned to 123, which is still rather low for a patient of her height and physique, but all her symptoms have disappeared, and she feels very well. No doubt a more or less chronic ulceration of the stomach which I always suspected had been there at times for some years before it was diagnosed.

Cases of this kind are rather frequent, so I shall discuss the next cause of malnutrition, that following arteriosclerosis. A very convincing argument of this condition was given by Cabot two years ago in a discussion of "Two Possible Causes of Emaciation not Generally Recognized." In a series of 19 cases of arteriosclerosis which he studied he found an average loss of weight of 29½ pounds in the average 11 years preceding the average age of 64. In the same paper he also made mention of several other plausible causes of malnutrition—namely excessive sexual indulgence, pain and loss of sleep. A report of three of my own cases may consequently serve well as examples at this point.

CASE I: Mr. W., aet. 60, was seen in the spring of 1904. In the preceding six months his weight had dropped from 160 to 130 pounds. He was weak and sallow, complaining of distress in his stomach after eating, with nausea. There was pain in the epigastrium with tenderness. The urine was normal in quantity, but occasionally gave a marked reaction for indican. Pus and blood-cells were found rather frequently, and small granular casts. The lungs were negative. The abdomen was scaphoid. The liver was easily palpable, hard and tender. The heart was slightly hypertrophied with a loud aortic second sound. The arteries were hard, though the blood-pressure was not high. The gastric analysis showed a hyperacidity and a hyperchlorhydria. There was no blood in the gastric contents, though there was history of former lavage of the stomach when blood occasionally appeared. The several subsequent gastric analyses showed about the same condition as the first. What now was the cause of the loss of 30 pounds in weight? Dyspepsia with previous gastric ulcer or beginning cancer was not improbable. Nephritis and cirrhosis of the liver could easily cause the same. With some hesitation the patient was put upon a treatment which was carried out quite successfully and resulted in restoring 10 pounds of weight in one year, beyond which however I could never increase his weight. He is now after four years quite well, though his former weight will probably never again be reached. During the first year of this man's treatment I was always uneasy, not knowing how soon I would be forced to diagnose cirrhosis of the liver, nephritis, or ulcer, or perhaps even cancer, of the stomach.

CASE II: Mr. O. W., aet. 47, was first seen in May, 1902. The family history was good and his previous history negative, except for the constant use for years of spirits taken daily in what was regarded as a temperate manner, no large quantities and never to excess. The weight had fallen from 180 to 150. There were symptoms of dysuria from an enlarged prostate with, however, little retention of urine. The urine contained blood and pus at times, a little albumen and a few casts. The liver was big and usually palpable. The abdomen was soft and not tender—except over the edge of the liver. There were few or no gastric symptoms. No gastric analysis was done The arteries were hard and firm. Heart and lungs were negative. Increased severity of symptoms was at once anticipated on account of the cirrhotic liver, and the enlarged prostate (which was handled gently). However, after four years of frequent observation with occasional treatment and advice, following a more continuous treatment for six months after the first consultation, I find him quite free from all symptoms and apparently well. His weight three years ago was 148 pounds, but six months ago was 167.

CASE III: Mr. D. K., aet. 63, a man of various occupations as a laborer, and now a foreman over laborers, came under observation during the last year. He was of good habits and 10 years ago he weighed 132 pounds, but now he weighs 90. He has gastric symptoms, anorexia, nausea, and distress after meals, and vomits occasionally. He had a slight cough with little or no expectoration, but had night sweats. He has had a fair appetite, but had artificial teeth for about 15 years, which he used only between meals as he claimed he could not get teeth well fitted. Examination showed arteriosclerosis, a negative urine, hypertrophy of the heart with mitral leakage and aortic roughening, anemia, dilation and ptosis of the stomach, and an achylia gastrica. His arteries were very firm and rigid. There was a systolic blood-pressure of 110. A diagnosis of arteriosclerosis was made as the most probable cause of the malnutrition, following a dyspepsia which might have been a factor in producing all his symptoms. Though under treatment for only a brief time the patient has gained a few pounds, and seems improving with the aid of a few drugs and carefully selected diet for achylia.

The above report of three cases of arteriosclerosis is much abbreviated. However it may be sufficiently convincing that arteriosclerosis is a general condition causing disorder in all of the organs at the same time. Defect in any one of the organs could be easily mistaken for the sole cause of all the loss of weight. All of the three cases had reached or passed middle life. And though the state of health of all of them is not at all alarming now, one can readily appreciate that the loss of weight which was so difficult or impossible to restore was a matter of no little concern to both patient and physician. Another feature of these cases of arteriosclerosis which has been emphasized by Stengel not long ago, ought to be mentioned at this place. The pallor which so many of these patients with hardened arteries show is often very conspicuous but frequently very misleading inasmuch as the cases often show on examination of the blood a hemoglobin practically normal, and a red blood-count of 6,000,000 to 7,000,000 or more, which is far above the supposed average in health. I can confirm this observation with quite a few cases. I do not hesitate to say emphatically that the premature senility and loss of weight which come on so often in people who have just passed into or beyond the middle period of life is the result of arteriosclerosis, perhaps more frequently than we appreciate.

The last of the three causes under consideration, nervous prostration, is one rather difficult to define. The term, no doubt, has been used frequently as a cloak to cover up an unrecognized condition and an inaccurate diagnosis in many patients.

Though difficult to define, this term is quite easily understood. It applies to a class of patients complaining of all kinds of symptoms of nervous origin, real and imaginary, and who have a slight, considerable or alarming loss of weight. No doubt this loss of power and weight is frequently the result of defects in other organs rather than a defect in the nervous mechanism itself. Any careful observer need not be surprised to meet cases in which the cause of the malnutrition has been named "nervous prostration" either by the patient or the physician or both, but in which a demonstrable underlying disease of the thyroid gland, chronic disorder of the heart, lungs, kidneys, liver, stomach and bowels could be found eventually. But granting there is such a condition as nervous prostration, and that no cause for the weakness, discomfort, and loss of weight can be found in any organ, except a nervous mechanism with unnatural signs and symptoms, it is a serious condition to meet and handle. It is often closely associated with hysteria from which it is many times hard to differentiate. The misery which these patients suffer, or seem to suffer, and the discomfort and anxiety which they cause to those about them is indescribable and at times almost maddening. Its onset, though usually insidious, may be sudden. Its duration is from a few months to many years. Complete recovery is difficult until the cause is entirely removed, much rest allowed, much food prescribed, and the lost weight restored. Many patients never recover but become easy victims of other intercurrent fatal diseases. Occasionally, though, such a final positive cause of death cannot be discovered and the cause of death can be attributed to nothing else than a malnutrition from nervous prostration. The following report of a rare and fatal case deserved more study than was permitted at the time of her illness and more comment than can be given here.

A girl at the age of 15 was seen in consultation in September, 1907. The mother was living and well. Father died of typhoid. She was never seriously ill and had reached a maximum weight of 106 at the age of 14. About that time she was given a rather confining position in a store and was made the confidant of a very serious financial situation in the home of her mother and step-father. She seemed to worry greatly, began to grow weak and tired and complained of distress after meals, anorexia and belching. The bowels became more constipated and all food as well as water was said to cause great distress in the stomach. The patient no doubt magnified her symptoms, and the family and relatives were in a state of such alarm and sympathy that they advised her to partake of only a very limited amount of food and drink. Finally she claimed she could not swallow water and nothing as hard as bread, and yet in my office we succeeded in having her take the Ewald test meal, two slices of bread and two glasses of water. An aunt, who was present, could hardly believe the girl could take so much water and food. Examination revealed normal signs of the heart and lungs. The urine was negative, the blood and reflexes normal, gastric analysis showed food well digested though there was a slight hypoacidity. Her weight at that time was 68. She was sent to the hospital for a trial of the Weir Mitchell treatment, however she died a few weeks later in spite of all medical effort. A postmortem examination carefully made by the attending physician was absolutely negative.

CASE II: A young lady, aged 26, was cultured and of a talented family. She and her brother were the only children. Father died of tuberculosis, the mother of an accident. The brother's wife also died of tuberculosis, and the patient, at the age of 17, became the adopted mother of her baby nephew. These family misfortunes occurred in quick succession. She was a delicate child, who had lost an average fair health in college. There was pain during the menses from a sharp anteflexion of the uterus which was said to produce convulsions but this was not observed personally. She had attacks of syncope, polyuria and insomnia. There were all kinds of gastric symptoms and unwarranted aversions toward food. Physical examination at a consultation, with an oculist and a neurologist, was practically negative. The urine, blood, and gastric secretions were negative but the patellar reflexes were almost absent. There was no tachycardia, tremor or exopthalmos when she was first seen. She has been under my care for the past four years. She is above the average in size. Less than a year ago she weighed 120 and gradually developed Graves disease with tachycardia, exopthalmus and tremor, and lost weight again very rapidly. She was given a long and strict Mitchell treatment in a rest house where she put on weight to 140. Today, though not robust, she is in better health than at any time during the last seven years. The hyperthyroidism and nearly all the neurotic symptoms have disappeared.

CASE III (Reported elsewhere): Mrs. E., aet. 57, was put under treatment in July, 1904. She had a group of nervous symptoms, anorexia, nausea, pyrosis, occasional vomiting of a "phlegm" and a "pressure over the nerves." There was a greatly dilated stomach reaching three inches below the umbilicus. She had a right floating kidney and some tenderness over the pylorus and duodenum. The total acidity was 40 but there was no blood in the stomach contents nor any evidence of poor motor power or delayed absorption. Her weight was 91. A treatment of six weeks in bed with forced food, bitter tonics, massage and electricity was carefully carried out with much improvement. After the patient left her bed she was required to wear clothes suspended from the shoulder, and an abdominal belt. In less than six months she weighed 115 pounds (more than she had weighed for years before) and she was greatly improved in health. In a more recent report from her she gave her weight at 135.

In the last group of three cases the fatal case seemed typical of neurasthenia. While the other two were termed neurasthenic it is a matter of speculation whether their symptoms were the result or effect of disturbances in other organs.

Only a few words may be added about the prognosis and outline of treatment for the three causes and classes of cases reported. That form of malnutrition following gastro-intestinal disease is often happily and surprisingly relieved after a studied diagnosis by a careful and ample diet, some medicine, and frequently a period of rest in bed.

That form of lost nutrition coming on near or after the middle period of life, and caused by arteriosclerosis, is more difficult to restore. It is a question whether it is wise to attempt a complete restoration after seeing that the patient is apparently healthy and comfortable. The considerable loss of fat with its obliteration of vessels and capillaries ought to decrease the work of the heart and consequently affect the other arteries and peripheral resistance favorably and lessen the tendency toward fatty changes in the heart muscle. Indeed I have wondered whether the occasional alarming loss of weight and lowering of blood-pressure, which is the result of arteriovascular disease, might not be nature's kind effort to maintain health by acting as a sort of safety valve toward further damage.

The prognosis in, and method of treating neurasthenia with its associated reduced weight is perhaps the most difficult question. Anything definite ought to be promised with great caution and a fixed routine method of treatment is seldom promising when the patients are most hysterical in type. But even here the results are frequently surprising and warrant painstaking effort for all cases. For this class of cases the absolute isolation from family and friends, the rest in bed, fresh air, a correct but liberal diet, hydrotherapy, massage, electricity, and some medicine, if indicated, are measures available and not to be forgotten or despised. For the average fairly intelligent patient these suggestions enforced by a tactful nurse and directed by the physician may be very successful, but otherwise a failure.

1803 East 82d Street, Cleveland.

The Mechanics of Lateral Curvature

By HENRY O. FEISS, M. D., Cleveland, O.

(Concluded from October issue.)

II. EXPLANATION OF PATHOLOGIC POINTS ON A BASIS OF NORMAL TENDENCIES

Explanation of direct distortions: The most striking point in the pathologic, which is to be based directly upon normal postural tendencies, is the compression of the one side of the thorax, this compression appearing to be an immediate result of peripheral strain as demonstrated in the normal. If, however, the ribs reacted according to the laws of normal tendencies, one would expect them to be more separated peripherally on the contracted side, as shown previously in the Röntgen pictures. This would be so if it were not for the additional fact of deformation—namely, as already pointed out, that the ribs give at their angles in an up and down plane. Next, owing to the compression of the rib ring on the one side, you would expect that the bodies of the vertebræ would rotate in accordance with the forces deduced from postural tendencies, and this you will find in the pathologic as an actual fact, for if you compare a horizontal preparation of a rib ring (Fig. 15) from a scoliotic skeleton with the cross-section model in its final position, the resemblance is most striking. You will further find in the vertebra itself just such marks of distorting strain as you would expect from the laws of normal tendencies; for many of these vertebræ show that the pedicle is lengthened and that the transverse process is bent toward the spinous processes on the side of rib compression suggesting the direction of the strain. The sternum in the scolictic is usually somewhere near the vertical, but this direction really represents a digression in the thoracic basket from its original position as compared with the direction of the dorsal column. This digression is just what you would expect as based upon the laws of normal tendencies, for it has diverted in accordance with the distorting ribs which are fastened to it.

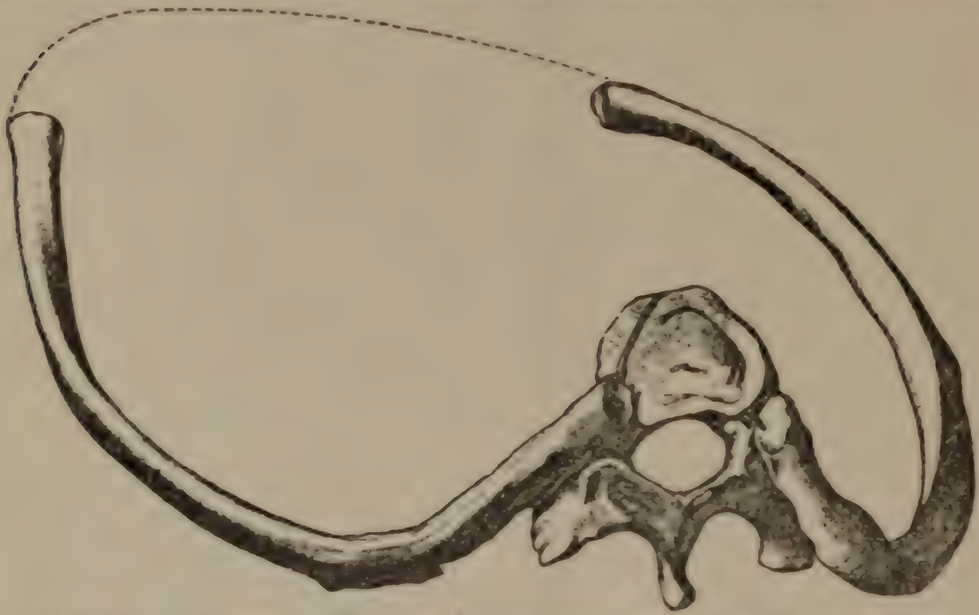

FIG. 15. (Lorenz.) Preparation of vertebra with rib ring, from scoliotic specimen.

Explanation of the columnar curve: Let me now turn to the explanation of the lateral curve in the column itself, and I will use diagrams to show the various formulæ by which this curve develops. Each diagram will represent a phase in which the attitude is either one of direct strain or one of relief from strain, the patient coming back to ordinary erect balance. We speak of these two kinds of attitudes as of deformation and recovery.

Taking lateral bend, we first picture an attitude (Diagrams 1 and 2) of deformation in which the ribs have given and have caused a retrogression of the vertebræ. Let us assume that this

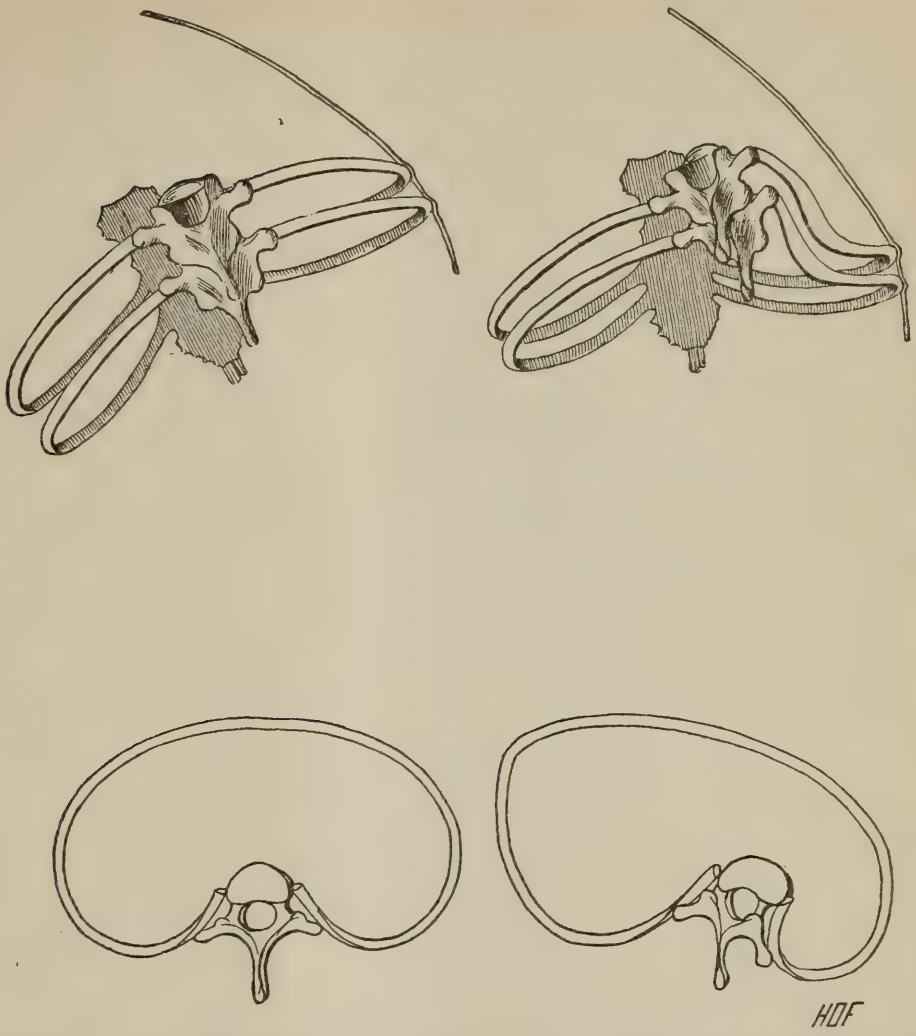

Fig. 16. Semi-diagrammatic views of vertebræ and ribs attached with and without distorting strain. Upper figures represent posterior view, showing the angulation of the ribs following lateral strain compared with the normal.

Lower figures represent view from above of same rib ring, showing the distorting effect in the rib and the changes in the shape of the vertebra following strain, also compared with the normal.

strain is carried so far or is so often repeated that the bones have become permanently set, the contraction of one side of the thorax being maintained. Then let the patient recover. It will be seen that the figure is out of balance on account of the inequality of weight in the two sides of the thorax; so according to the first law of tendencies—namely, that the weight of the segments must be equally distributed around the line of support, the thorax must be shifted. As a result (Diagram 3), adaptation must take place in the column to allow for the shifting—hence, a lateral curve. It is also possible in an intermediate stage that in recovery from a side bend the patient may come back to the erect attitude by maintaining the deformation relation of head, thorax and pelvis

Diagrams (H. O. F.) to illustrate the transformation of the curve in the spinal column from the normal to the scoliotic, each representing an isolated phase either of deformation or recovery. (The tips of the spinous processes are connected by a heavy line to indicate the lateral curve as externally apparent.)

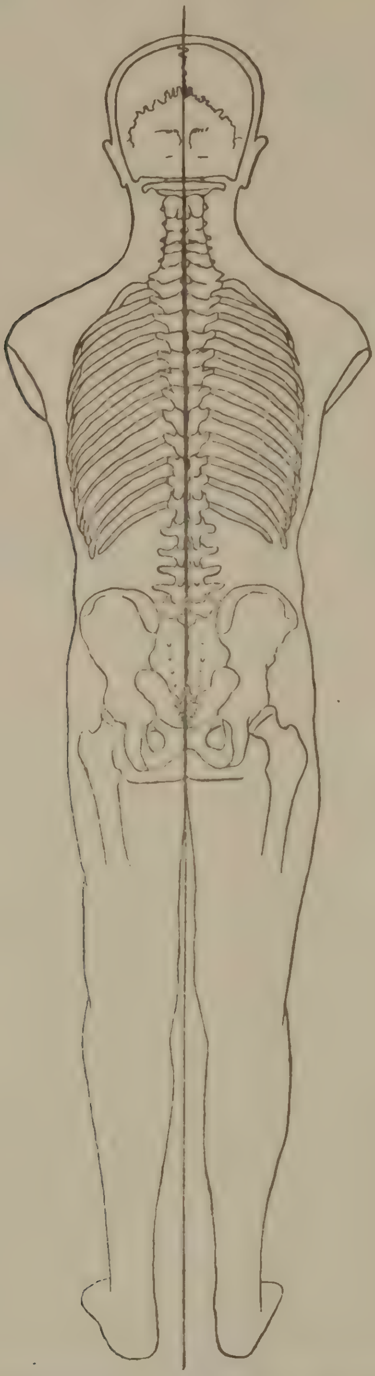

DIAGRAM 1. Normal erect.

to each other, as by bending the knee. But that makes no difference because the ultimate effect in recovery depends always on the equilibration of the segments according to their weight around the line of support (Diagrams 4 and 5).

LATERAL BEND.

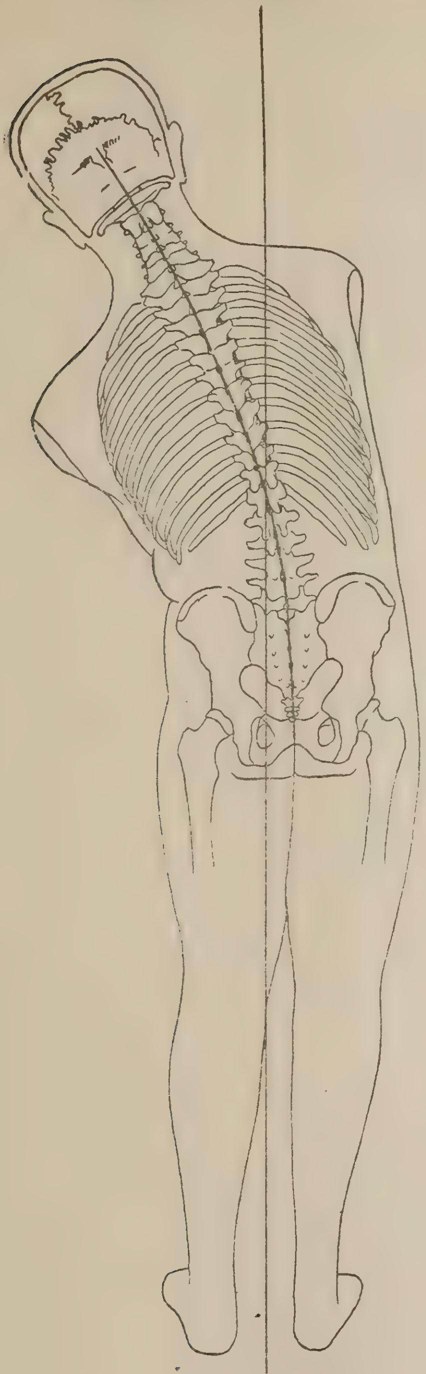

Diagram 2.

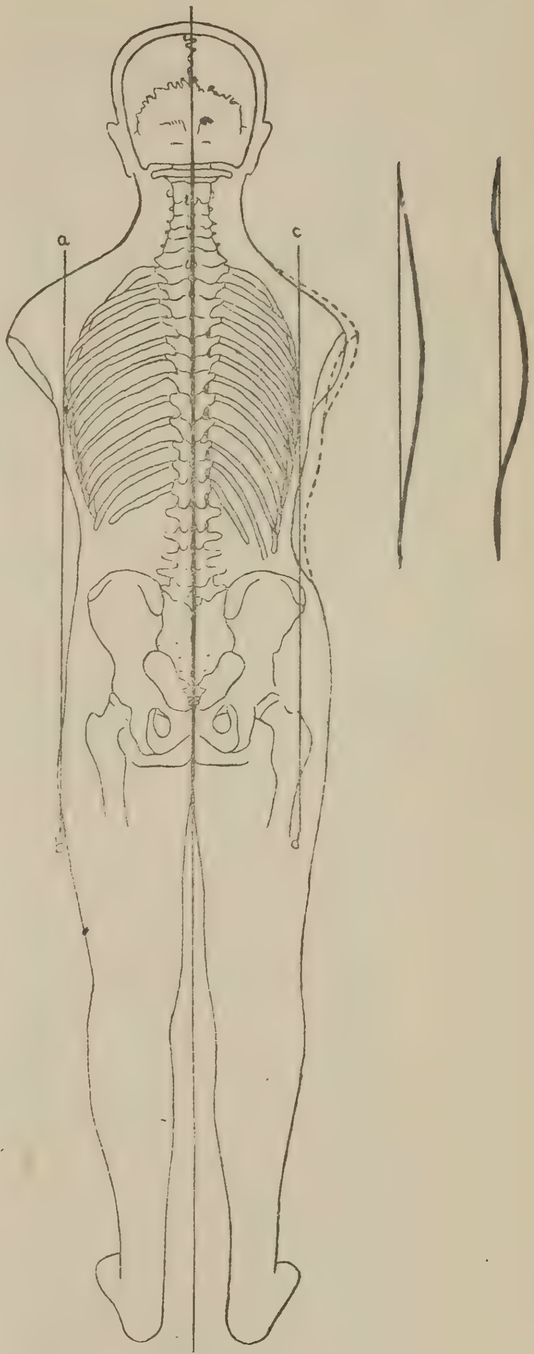

Diagram 3.

Diagram 2. Deformation. Bend to side. Rib distortion on the convex side. Line of spinous processes makes one long curve. Retrogression of dorsal vertebræ.

Diagram 3. Recovery from 2 without bend in spine (segmental). The only change here from deformation is the distortion of the chest wall with the accompanying retrogression of dorsal vertebræ. The lines a b and c d are gravitation lines drawn as lateral tangents to the chest walls and indicate the unequal distribution of the weight of the thorax with reference to the pelvis. Dotted line on the right indicates the contour which the thorax must approximate, to gain the easiest balance. Result in the spine must be either total bend or compound bend as indicated by either of the curves on the right.

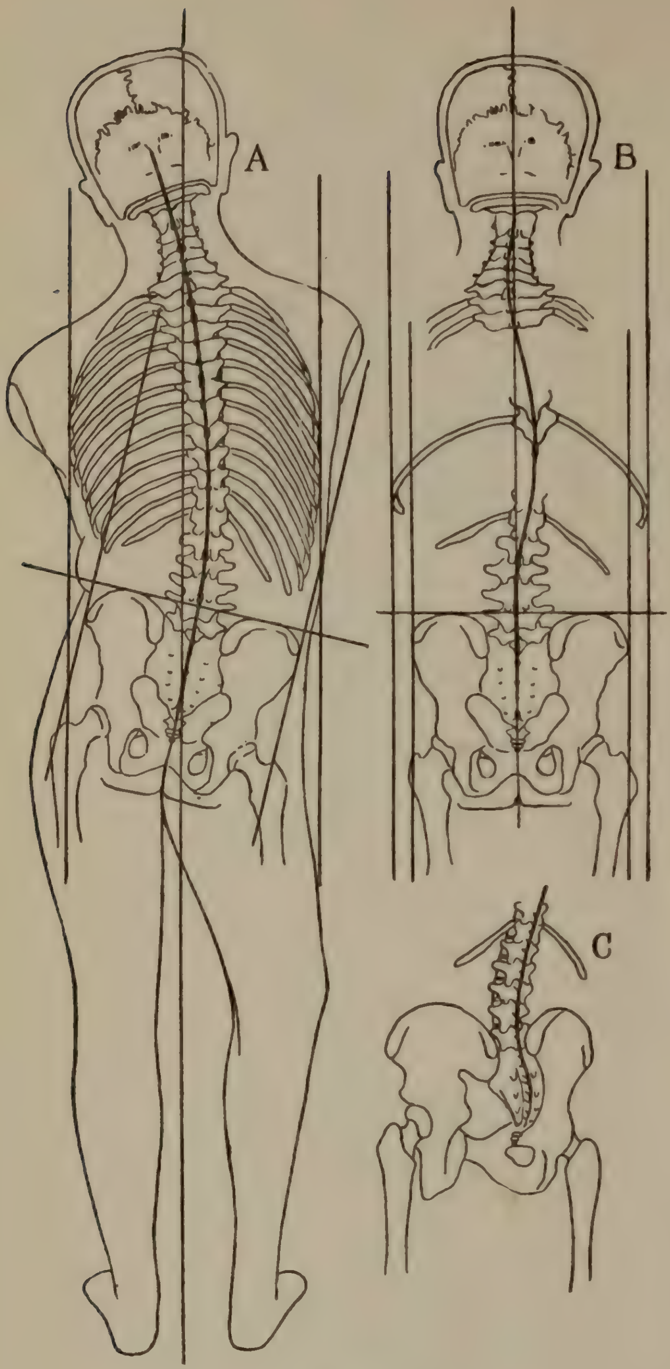

DIAGRAM 4.

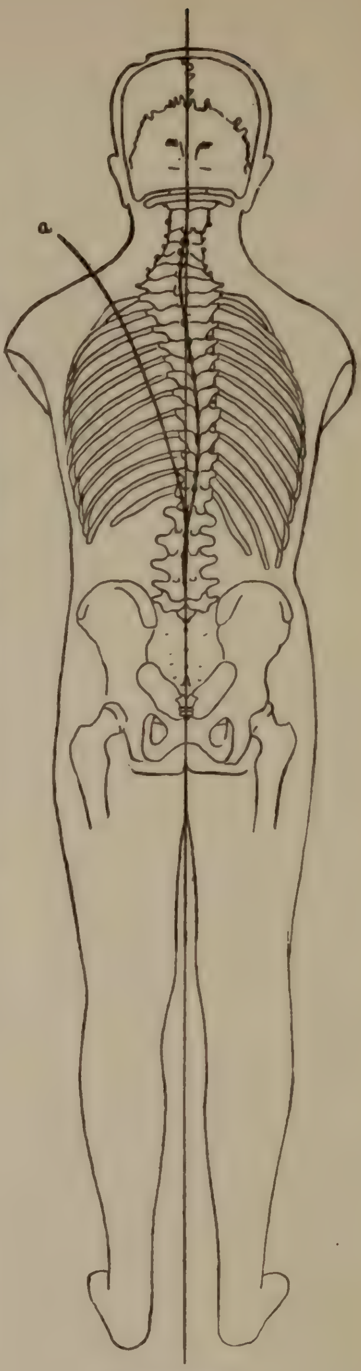

DIAGRAM 5.

DIAGRAM 4 A. Recovery from 2, where head, chest, and pelvis recover as one piece, accomplished by bending the knee. Rib distortion maintained. The line of the spinous processes is identical with that in Diagram 2.

DIAGRAM 4 B. Further recovery from 4 A (or follows 2 directly). Head and pelvis leveled, and equilibrated to thorax as shown by tangential lines. Result, a compound curve in spine.

DIAGRAM 4 C. Similar recovery from 4, the pelvis here being leveled without the bend in the dorso-lumbar spine, namely, by a twist.

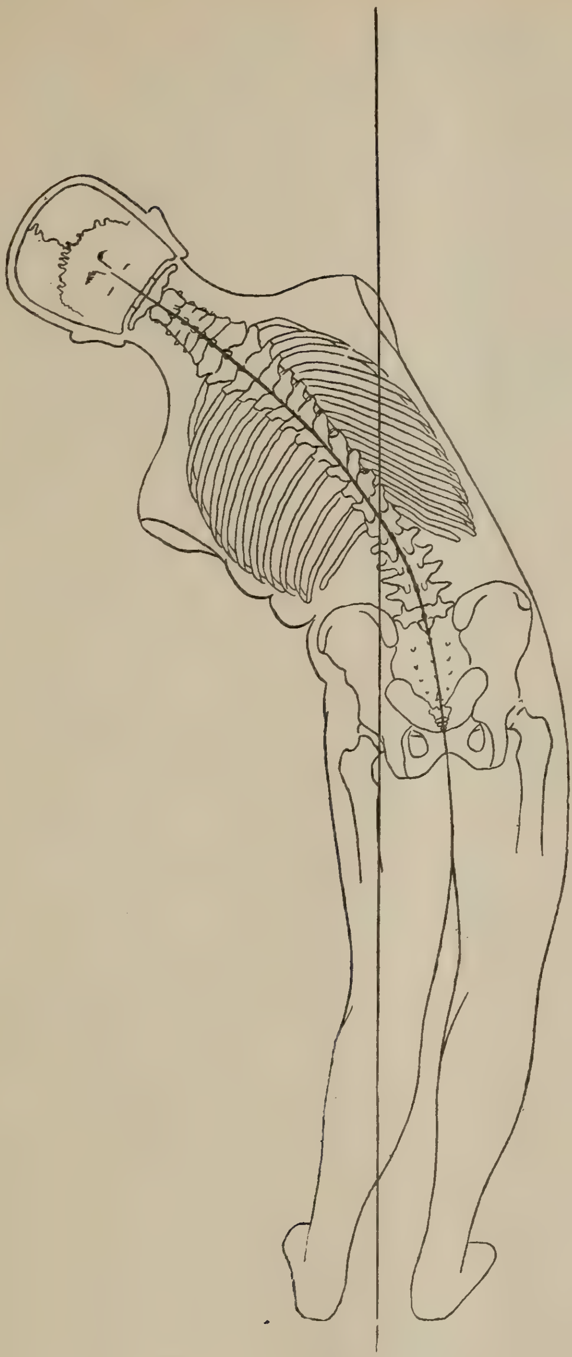

Diagram 6.

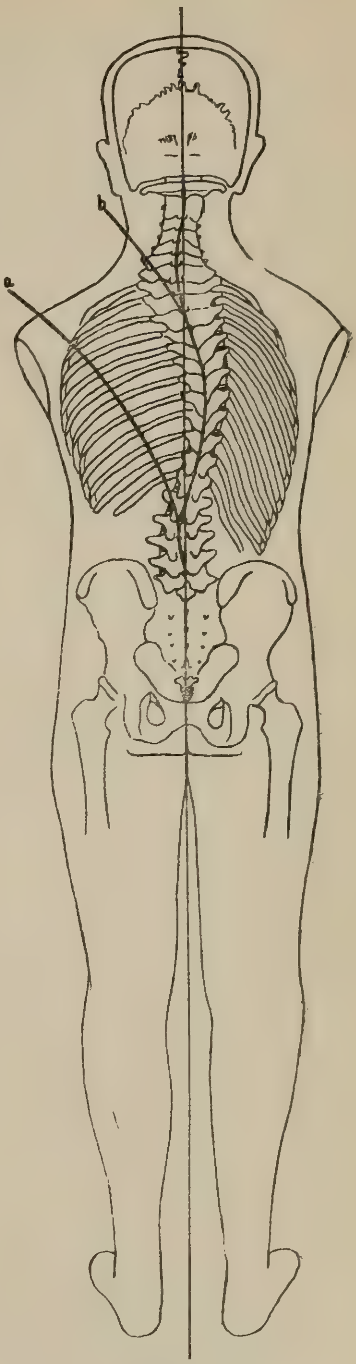

Diagram 7.

Diagram 6. Deformation. In this diagram besides the rib distortion, we assume an actual permanent bend in the dorsal spine, thus the convexity of the bend in itself becoming a factor in the approximation of the column to the lateral wall.

Diagram 7. Recovery from 6, the bend of the dorsal spine being retained. The line ending at (a) indicates the original bend of 6 in the line of spinous processes. The line ending at (b) is the same after recovery but before the head is equilibrated. The two lines meeting join the present line of the spinous processes at the dorso-lumbar segment again showing where the greatest adaptability is. The equilibration of the head forms the curve in the cervical region.

TWIST.

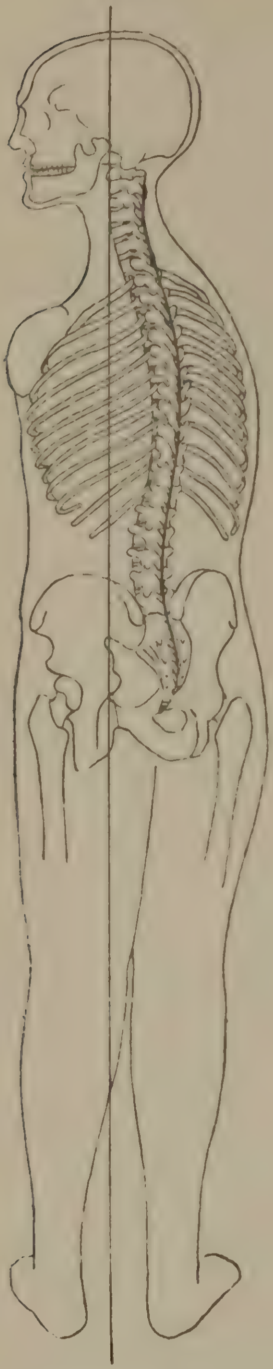

DIAGRAM 8.

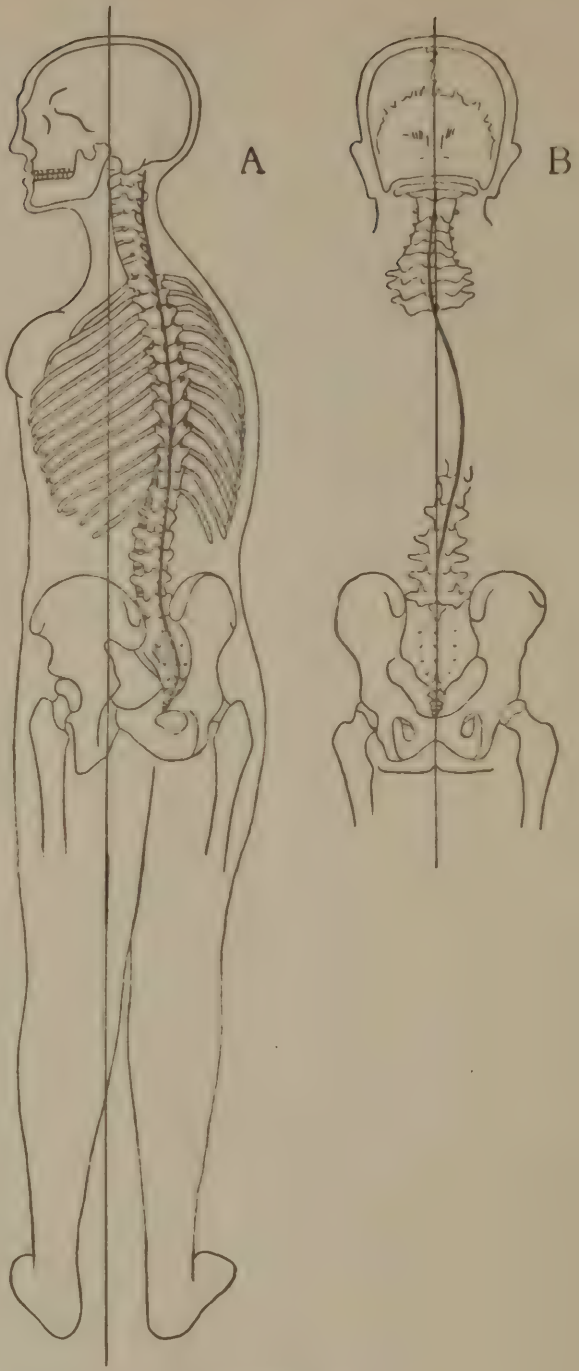

DIAGRAM 9.

DIAGRAM 8. Deformation. Twist of whole body from the feet.

DIAGRAM 9 A. Deformation continued from 8. Vertebral retrogression and rib distortion. Dorsal bodies are twisted with respect to the lumbar. Approximation of lateral rib wall to the column.

DIAGRAM 9 B. Recovery from 9 A with chest deformity partly maintained. This means an untwisting of the head and of the pelvis with respect to the dorsal region implying a dorsal curve.

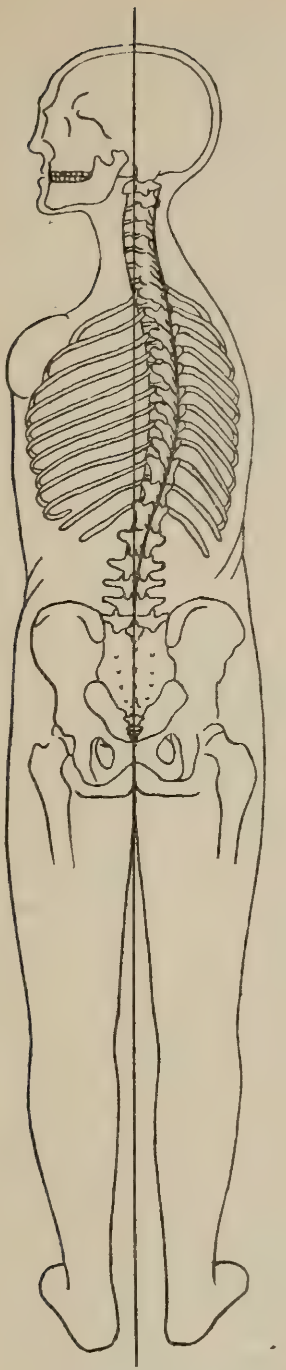

Diagram 10.

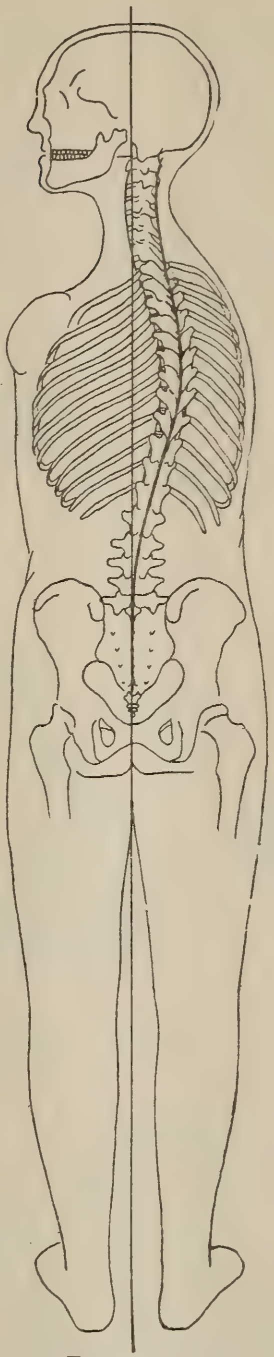

Diagram 11.

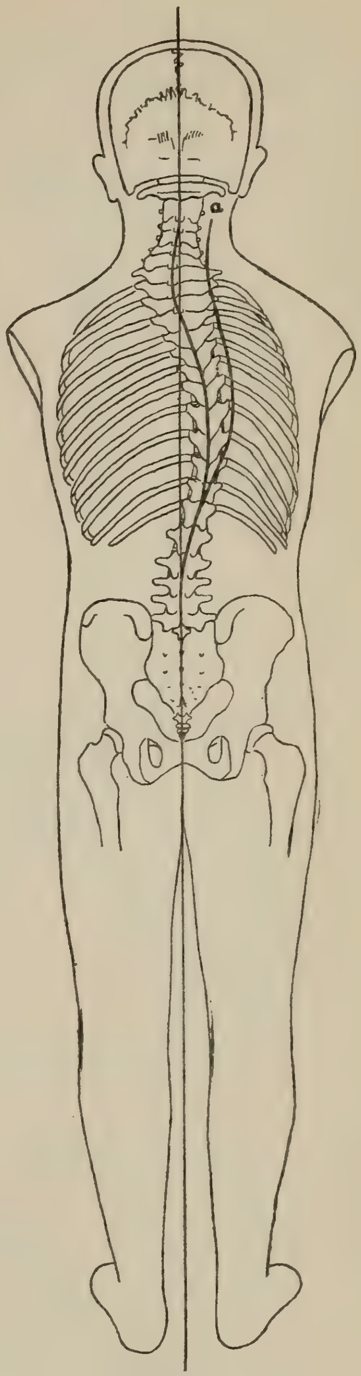

Diagram 12.

Diagram 10. Deformation. Twist from pelvis.

Diagram 11. Deformation of 10 continued, in which retrogression of the vertebræ has taken place.

Diagram 12. Recovery from 11. The line ending at (a) indicates the direction of the spinous processes during deformation, branching from the present line of spinous processes at the dorso-lumbar section as with lateral bend, here again the region of greatest adaptability. Once more approximation of column and lateral rib wall is maintained.

Let us next conceive a side bend carried so far that the column adapts itself directly to the deformation and becomes permanently bent on account of the inherent primary strain; then the convexity of the bend in itself becomes a factor in the approximation of the column to the lateral rib wall, so if the ribs take a set, then, on recovery to the erect attitude, the fact that the ribs have become set implies a maintenance of the approximation of the lateral rib wall to the column and so a permanent lateral curve (Diagrams 6 and 7).

In a twist we have very similar conditions. The deformation in twist may begin at the ankles or at the pelvis. In either case, if you bear in mind the normal tendencies and remember the illustration of the forces in the cross-section model, you can readily picture what a twist does with regard to the vertebræ, and as in lateral bend there will be a contraction of the thorax on the one side as compared with the expansion of the other. Then on recovery you can picture the patient as untwisting the head and pelvis with respect to the deformed thorax which must imply a dorsal curve (Diagrams 8 and 9). Twist from the pelvis may bring about the final effect almost directly without much recovery, for, owing to the twist, the normal dorsal convexity of the column immediately becomes a lateral convexity and the vertebræ retrograde in their new position, thus fixing the curve permanently (Diagrams 10, 11 and 12).

We have detailed various formulæ by which the lateral curve may develop, but in unfolding these plans separately, we assume that the forces implied in different ones may act co-ordinately, and from the broadest point of view, many of the processes are either one or closely allied. The underlying principle is always the same, namely, that the final condition represents the result of two distinct processes—first, the process of deformation in which certain distortions are brought about directly, and secondly, the process of recovery, in which the distortions produced by deformation and persisting as residual effects occasion permanent readjustment of parts in order to make those parts conform with ultimate conditions of erect balance.

Evidence of the living: Let us next see if evidence of the living scoliotic is consistent with these notions. If we take a normal individual and place him next to a scoliotic, bending them both in a certain direction, there is a distinct resemblance between the two (Figs. 17, 18, 19 and 20). This position of resemblance

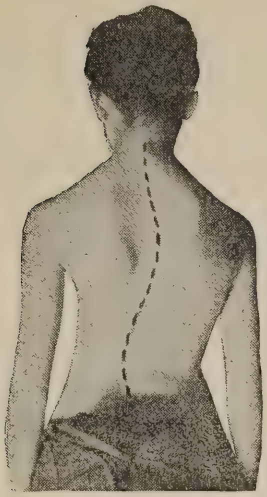

FIG. 17. Scoliotic erect (recovery).

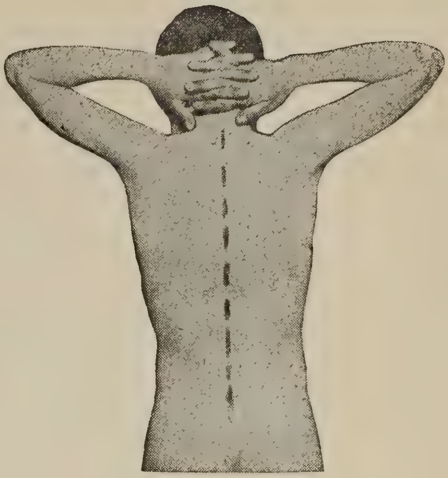

FIG. 18. Normal erect (recovery)

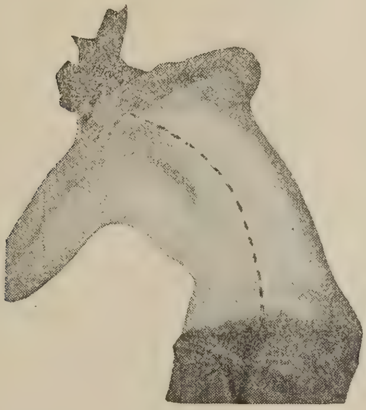

FIG. 19. Scoliotic side bend (pure deformation).

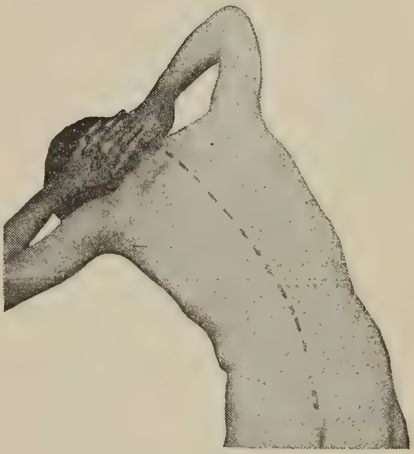

FIG. 20. Normal side bend.

in the patient may be styled a position of pure deformation. The points of resemblance to the normal are the similarity of peripheral strains, the conformation of lateral contours and the general shape of the curve of the spinous processes. Briefly, the distortions of the scoliotic seen in such a position seem nothing more nor less than ought mechanically to follow a similar pose in the normal. Some of the cases most strikingly resemble the normal in a position of twist but the great majority fall naturally into a combined state, in which there is much lateral curve, some twist and perhaps a little forward bend. It is then by isolating such a position that we note how the clinical evidence confirms previous findings, because in that position we seem to have a graphic picture of the vicious strains carried to their extreme.

Weight-bearing: The last point which I wish to mention is the significance of weight-bearing. I believe that weight-bearing enters into the mechanics both in the deformation and in the recovery. In the deformation the superincumbent weight acts like any other remote cause after such a remote cause has become active; and once deformation has begun the body will react according to the laws of tendencies, earlier explained. Then following deformation, the segments must be rebalanced around the line of support, and when we remember that the weight of these parts is the constant quality of substance necessitating such a balance, we can readily understand what significance weight has in the actual recovery (Figs. 21, 22, 23).

How weight-bearing enters in.

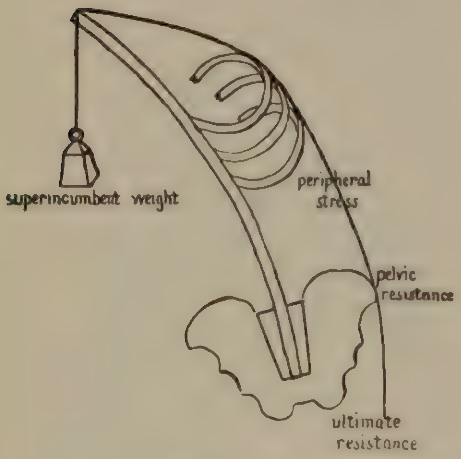

FIG. 21.
Deformation.

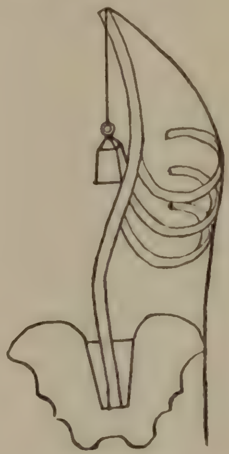

FIG. 22.
Partial recovery.

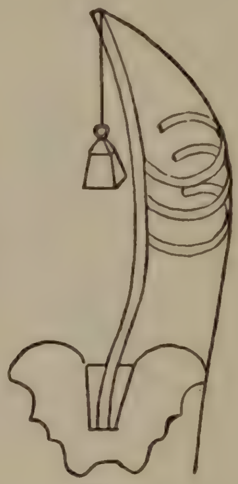

FIG. 23.
Total recovery.

Conclusion: This disposes of some of the essential points in the theory, and let me now briefly restate in very concise form the principles on which I based my views. They are as follows: there are certain conditions in normal posture in which asymmetric forces bear on the skeleton. These strains in the skeleton may best be studied in terms of distortion, although, of course, no permanent distortion takes place in the normal.

In this way, it is found that the peripheral stresses are of great significance implying tendencies (as read in terms of distortion) which are very suggestive of the fixed distortions seen in the pathologic skeleton. But to explain those pathologic facts on a basis of normal tendencies we have to assume that the vicious forces become so great in relation to the skeletal resistance, that the bones which are under strain finally take a permanent set. This may readily be supposed on the grounds of repetition, prolongation or diminished resistance in the skeleton. On these assumptions we may understand how certain deformities take place directly. Such direct deformation, however, seems to occur only in a given part—namely, in the thorax, so that following this, the body mass as a whole must readapt itself to conditions of erect balance. This implies a second adjustment of the deformed thorax to the rest of the body, and this is the final adjustment which is said to represent the state of lateral curvature.

Observations on the Medical Progress in the Orient

By IRVING LUDLOW, M. D.
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(Concluded from October issue.)

COREA

Corea has been much maligned and until recently little appreciated, being overshadowed on the one hand by the great numbers in China and on the others by the wit and prowess of Japan. Those who live among them, however, consider them the most agreeable of the Orientals. Kija, the founder of Corean civilization, lived about the time of the reign of David in Jerusalem. In the fifth century after Christ, Corea enjoyed a high degree of civilization and it was from her that the then half savage tribes of Japan drew their first impulse to culture. The country has about ten million people and is about the size of Utah. The configuration of this land consists of a succession of mountains and hills. The Coreans have an expression "Over the hills, hills again, hills without number." In some parts of Corea are still old tablets which read, "If you meet a foreigner, kill him. He who lets him go by is a traitor to his country." Even the Chinese, who, up till 1894, yearly received the ambassador with Corean tribute, knew almost as little as others of the inner life of this so-called Hermit Nation. It was only with the advent of Dr Allen the first medical missionary that the doors began to open to foreigners. Any attempt at an extended description of Corea and her people would be out of the scope of this writing but it will perhaps not be out of place simply to give a short picture of the life led by this quaint people and a few of their superstitions and sayings in regard to medicine. Dr Gale in "Corean Sketches" and Hulbut in "The Passing of Corea," give some interesting information along this line.

The country people in particular live the simple life. There is the field where they grow the cotton. There, in a room in the inner enclosure of the house, the women spin and weave it into dress goods. For extras the silkworms are busy feeding on mulberry leaves and winding their cocoons. The black hats and head bands are usually purchased though the straw shades and mourning hats are woven by the men. Straw shoes, too, are made by any male member of the family. A Corean can accomplish wonders with a bundle of loose straw. He makes from what we consider useless, shoes, ropes and mats. Then there are the fields of rice and buckwheat. The rice is gathered in sheaves and threshed out over a log before the door, the grain falling on mats. This again is hulled by a water pestle or large hammer worked by a running stream. The grain is put into a hollow stone and then the hammer pounds away until it is hulled. It is then ground by two women at the mill, one turning the stone and the other feeding the grain. The rice thus furnishes both clothes and food. Little is left for them to buy and fortunately so, for the majority have little money. During our stay of three months we became very fond of this people with their peculiar topknots, black horsehair hats, quaint white dress and tremendously wide pantaloons. It is the opinion of most people that these people are worthy of our consideration. They are a people whose regard can be readily won by kind treatment. It is a regret that a nation such as Japan has failed in large measure to win the respect of the Coreans of the present day.

In former times and in many places at present, the Coreans have been devil or spirit worshippers and this has had its effect on medical ideas. As an example take small-pox. This disease enjoys a special oversight of the Great Spirit of Small-Pox, and the Coreans consider this ailment one of the most terrible which can befall them. It is even more feared than cholera. From the fifth day after the appearance of the disease, no member of the family may comb his hair, wear new clothes, sweep the house, cut wood, drive nails, or paper the walls. Any of these would leave the patient blind or marked severely. If anyone does sewing in the house it will cause intolerable itching in the patient. No animal should be killed for this would cause the sick man to scratch his face and aggravate the disease. After the ninth day all these restrictions are removed except driving nails, papering walls and killing animals. On the thirteenth day the spirit is supposed to depart. A feast is set before the patient. A wooden image of a horse is made. A straw bag filled with rice and money is placed on its back and the horse placed on the house top for the departed spirit to ride. Even though death occur this is done. The Coreans have a book, which in parts resembles a domestic medicine book. In every Corean book stall will be found the volume entitled "Six Marks of Divination or the Five Rules for Obtaining The One Thousand Blessings." It affirms that the human body is subject to two kinds of disease, those which can be cured by medicine and those by exorcisms. Some people have foolishly tried to use both kinds of treatment. The book tells on what days of the month special diseases are likely to break out and the name of the spirit causing them. Diseases of women and children are largely dealt with showing that it is the women who are the chief users of this book.

On our way from one village we passed a home from which issued a terrific medley of noises. Upon going to the door and looking in we saw a man suffering from acute inflammatory rheumatism. His supposed friends were beating on drums and bamboo sticks in an effort to drive out the evil spirit which they hoped to ensnare in a paper sieve hung from the ceiling. The poor man bore the proceedings with great fortitude. After some expostulations we persuaded the people to cease their noise and gave the man a prescription directing his family to obtain the medicine at the hospital in a neighboring village. Their internal medication is even worse than their efforts to drive out the spirit by noise. It will be impossible to indicate all the remedies in common use but the few following will probably be sufficient:

Three live frogs, five boiled dogs' feet, water in which burned hair has been boiled, the yellow clay in which a frog has been wrapped and burned to death. One day our coolie killed a serpent which he said was a most valuable remedy for almost any disease. The Coreans may have had no idea of pathology, yet they have a proverb which reads, "Cut off a wart and make a tumor." Other proverbs read, "He went out and caught the dropsy out of envy of the fat man." The value of personal observation is illustrated in the saying, "If you want to know how deep the river is, wade in and see." Our proverb, about locking the door after the horse is stolen, is expressed equally well by the Coreans, "Fill out the prescription after the friends of the sick man have put on mourning." The native idea of surgery is extremely crude. The scalpel for scarification and needles of various lengths to insert into inflamed joints or even the abdomen or chest, being the chief instruments. Is it any wonder with such a heritage that the Corean looks with the greatest respect upon the foreign doctor? One man told me that his wife was dead and the foreign doctor gave her back to him alive. Another came to the same physician and offered him his daughter saying that had it not been for him his daughter would be dead, therefore she belonged to him. Their appreciation is often shown by gifts. One of my patients presented me with two strings of eggs (20 eggs done up in straw), a chicken and a fish.

When one considers the poverty of these people such a gift is precious, for like the widow's mite it is usually given with the proper spirit. Medical work in Corea has received great encouragement from the deposed Corean Emperor. For many years he has had a medical missionary as his physician. The Japanese, not satisfied with deposing the Emperor and practically making a prisoner of him, have also deprived him of the services of his chosen physician, a man held in high regard by both foreigners and Coreans. Do the Japanese consider the office of physician to the Emperor, whom they have so disgraced, such an honor as to adopt such a course? It cannot be denied, however, that the Japanese are making great improvements in the sanitary condition of Corea and are establishing hospitals in Seoul and other cities, but this work is chiefly for the benefit of the Japanese and

SEVERANCE HOSPITAL, SEOUL, COREA.

the Coreans pay the bills. Practically all the work for the Coreans is being done by the medical missionaries.

In Seoul is the Severance Hospital situated on an eminence opposite the railway station and a short distance outside the city wall. This is a two story brick building of modern type and equipment, having a public ward, private rooms, operating room, offices, and in the basement a store room, dispensary and rooms devoted to translation work. It is now planned to have the dispensary in a separate building. The hospital accommodates about 40 people. There is a separate building used for an isolation ward. The hospital is in charge of Dr O. R. Avison and Dr J. W. Hirst. During our stay of three months in Corea we were guests of Dr Avison the greater part of the time, and it was a pleasure to have had such an opportunity to study conditions in Corea with one so well qualified to impart correct information. The year preceding our visit 493 cases of great variety and severity, the large majority surgical, were treated in the wards of the Severance Hospital.

During the same year a private office clinic for the Coreans was developed which included 875 consultations. Each of these patients paid one yen (50 cents) for consultation, in addition to the charge for medicine. A foreign practice included 686 office consultations and 386 visits to the patients' homes. At Corean homes 111 visits were made and 121 visits to the palace of the Emperor. About 12,000 cases were treated in the dispensary. In addition to translating works on medicine, pathology, dermatology, surgery, bacteriology, materia medica and physiology, Dr Avison for a number of years has been instructing the Corean students, the first class graduting this year. In connection with the hospital, Miss Shields is supervising a training school for women and though it is an entirely new field for Corean young women they show an aptitude for this work and a sympathy and interest in their patients. Practical experience, as well as observation in not only this hospital but also in those in Pyeng Yang and Fusan, leads me to the conclusion that the Coreans will make even greater progress in medical work within the next few years. The medical men of Corea are bending every effort to make their work self-supporting, in fact it has been a necessity on account of the small appropriations and assistance from home. During my stay in Seoul a meeting was held to establish the Corean Medical Missionary Society. This is a branch of the Chinese association and was formed for purposes similar to those in our own land. Section meetings are held in various parts of the country every three or four months and representatives from each section meet in annual session. The members were urged to take part in research work on the subject of intestinal parasites and were supplied with blank forms for recording their observations. Various committees were appointed to receive suggestions and make recommendations in regard to the various specialties and such subjects as medical education and the training of nurses. Having attended this meeting and having read a surgical paper, the physicians in Pyeng Yang, a city north of Seoul, requested me, as they expressed it, to put into practice what had been preached to them. It was a unique experience to operate upon a case of multilocular ovarian cystoma with Coreans peeking in the windows and standing in the doorway of the operating room. At home such things would not be allowed but it is sometimes impossible to shut out the Orientals, some of whom would immediately suspect a surgeon insisting on such secrecy. This hospital at Pyeng Yang, under the charge of Dr J. Hunter Wells, combines both foreign and Corean styles of architecture. On one side the wards are built in the native style with a stone floor, heated from underneath, and the patient's bed consists simply of a mat spread out on the floor. Dr Wells and Dr Folwell began classes in connection with the hospital but have since turned them over to the new government school established by the Japanese. The number of cases treated in Pyeng Yang each year is about 500 in the hospital and 9,000 in the dispensary. Syen Chyun, one of the northern cities, has a small but well kept hospital and dispensary. Even though Dr A. M. Sharrocks was on his furlough the building and grounds were in almost perfect order and cleanliness, an excellent example of what might be done in the Corean homes. One of the features of the hospital, which has been of great service to the town, is the bath room which is open to the public every day for a small fee. The number of patients treated here every year is about the same as at Pyeng Yang. In Chai Ryung Dr H. C. Whiting and in Taiku Dr W. O. Johnson were completing new hospitals which are doubtless by this time in running order. The last place visited in Corea was Fusan the southern port. Dr C. H. Irvin has labored here for 14 years and although his hospital is not large it is one of the most attractive for neatness and order of any hospital visited in the Orient. About 10,000 patients a year are treated in the dispensary and hospital. Dr Irvin writes: "By far the most distressing cases who have come for help are those who have come with leprosy. These are sad and trying cases. To be confronted day by day by a victim who has advanced to the last stages of this disease, his feet or hands partly gone, likewise his nose or ears, his face bloated, his body in a wretched condition and over it a few rags, on his back a broken gourd and a straw bag, the one in which to carry his food and the other for his bed. To have such a one prostrating himself before you, making signs and gestures, for the inroads of his disease have hushed his voice, pleading for that help and mercy which you are unable to give, is a scene for a life time. Multitudes of those affected with this unconquered enemy of man live in this region, large numbers of whom have applied for help. Plans are now under way for the establishment of a lepers' home. While no medical cure can as yet be given them, their suffering can be more or less relieved, their lives prolonged and made more tolerable." The chief assistant in the hospital is a Corean who had been associated with and trained by Dr Irvin for years. He speaks Japanese and English almost as well as Corean. For years he has given the large majority of the anesthetics, having given almost 10,000 chloroform anesthetics without a fatal result. He is a skilled pharmacist and in Dr Irvin's absence he is capable of managing all the affairs of the hospital. With the establishment of the lepers' home he will be assistant in that work. This young man could make five times as much money in private work as he receives from the hospital but he is filled with a desire to help his own people and is therefore willing to accept a salary which is scarcely sufficient to support his family. It was my privilege to operate in this hospital and to come in personal contact with the staff, and as one works with the natives he is impressed with the great opportunities and the great possibilities which are in store for Corea, a nation which can no longer be called the Hermit Nation.

BURMAH, INDIA

Returning once more to Japan we took a steamer for India, stopping this time only a day or two at the various port cities including Shanghai, Hong Kong, Singapore and Penang. The hospitals in the Strait Settlements are chiefly under British control. Those which we visited at Singapore and Penang were built in a style adapted to such a warm climate, the large commodious wards being separated from each other by considerable ground space. The hospital buildings as a rule are only one story in height, the wards are well kept and the grounds are made beautiful with tropical plants and foliage. Before going to India we spent two weeks in Burmah. In religion the Burmese are Buddhists, 88% of the population professing that religion, and every Burmese is supposed to spend a certain part of his life as a "pongyi" or monk, whether or not he adopts the sacred calling ultimately as his career. The shorn head and yellow robe of the monk are a common sight especially in Mandalay, where early every morning thousands can be seen going about the streets from house to house begging rice. Representatives of this religion and some of our own Americans, who have seen only one side of Buddhism, would have us believe that it is an ideal system. But there is a great contrast between the high ideals and the actual practise. Any medical man should care little for any system which takes such good care of its priests, and neglects the sick, the blind and the leper.

While in Mandalay we visited two asylums for lepers. One, the St. John's Leper Asylum, was founded by Father Wehinger. The grounds are large and well kept, the buildings, now including a church and convent, accommodate over 200 patients, though there is room for many more. The government aids the Catholics in their work and sends their lepers to this asylum. One is greatly impressed with the contentment of these people in spite of their terrible affliction. The father who conducted us through the home said that there were 20 sisters who care for the patients and never in the history of the institution has any one of them contracted the disease. Not far from this is another home for lepers, one of the refuges of the Mission to Lepers in India and the East, under the immediate direction of the English Methodists. At the time of our visit there were in this home 113 men, 45 women, 22 children and 18 untainted children. The superintendent, Dr A. H. Bistall, is a native of Madras, India, and graduate of the Government Medical College. He has had charge of this work for 16 years handling daily the lepers, many of whom require dressings. In India two other asylums were visited, the Naini Asylum at Allahabad which has about 160 inmates and an asylum under the medical direction of Dr W. J. Wanless at Miraj. It is the intention in these various institutions not only to give shelter and food to the sufferers, segregate them and relieve the pain as much as possible, but also to keep them interested in various light occupations and to improve them mentally and spiritually as much as possible. India with its vast population of three hundred millions presents a great problem for the British, not only concerning the government but also with regard to the education and medical attention required by such great numbers. The progress made by the government along medical lines has been so well described by various writers, among them Dr J. E. Mears, that it would seem only a repetition if my own observations were recorded. There is, however, one government clinic which deserves mention even at the expense of repetition. In the city of Jullundar in North India, the Civil Hospital is in charge of Major Henry Smith. His fame as an operator for cataract has extended over all this region. In one year he has performed 3,000 operations for cataract. The morning we visited his clinic we found 20 patients sitting about the operating room awaiting their turn. There were three tables, upon each of which patients were made ready for operation by assistants. Although Major Smith was unaware of the fact that his operations were being timed, and seemingly made no special effort at speed, he removed four double cataracts in 20 minutes. The chief aseptic precautions were confined to the instruments. He asserts, however, that he rarely has an infection following his operations and that over 95% are improved. Such is the faith of the natives in their surgeon that they constantly bring patients who are hopelessly blind expecting him to restore their sight. There are also in this region large number of cases of vesical calculi, most of which are removed by the lithotrite. One of these cases was operated upon by the native assistant while we were watching the cataract operations. The anesthetist, also a native, is a man of great experience. Major Smith says that if he were to be operated upon he would as soon have this Indian anesthetist give the chloroform as any foreign medical man.

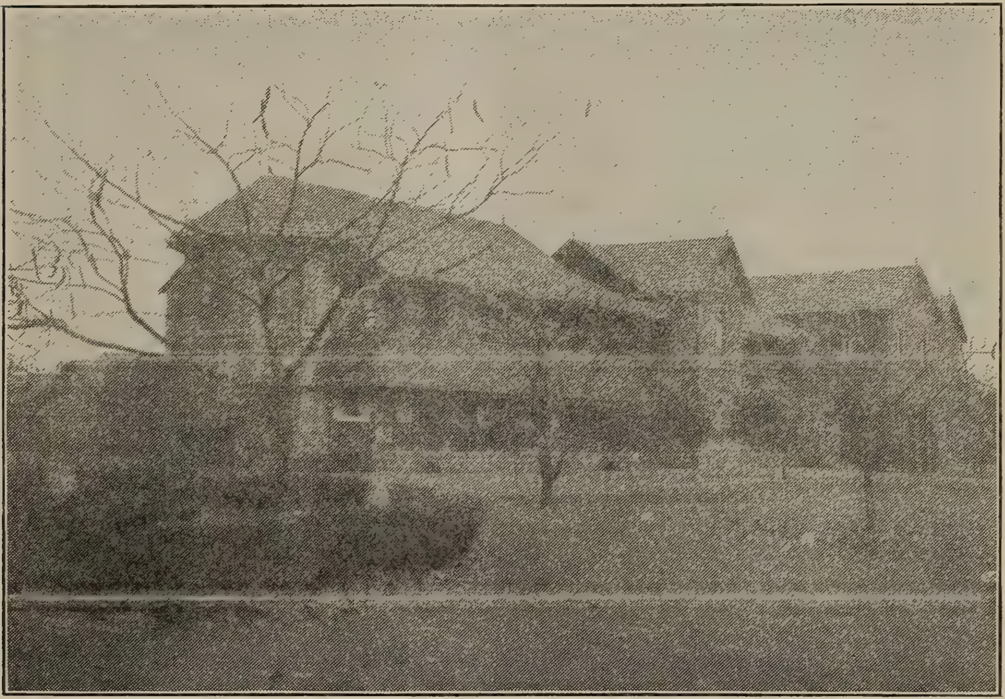
The government is being greatly aided in its efforts by the medical missionaries throughout India. The seclusion of women in India renders it almost impossible for them to receive medical attention except from women physicians. Here above all other opportunities is the great place for women to carry on their benificent works. During our three months in India we visited many of the women's hospitals. At Allahabad the physician in charge of the hospital was at home on furlough but the work, especially in the dispensary, was carried on by efficient native assistants.

At Fategarh Dr Mary Fullerton, formerly of the Women's Hospital, Philadelphia, has at her own expense equipped a small but excellent hospital and dispensary where each day from 50 to 100 women receive treatment. A school of medicine for the women of North India has been established at Ludhiana. The school and hospital are supported by several denominations. Miss Mary Noble, M. D., and Miss Brown, M. D., have charge of this work. The school received in addition to the support given by the missionaries a government grant which provided for a good supply of furniture, apparatus and other equipment. The attendance is continually increasing and the new students have higher qualifications than applicants have usually had in the past. There are 20 in the medical class, seven studying pharmacy and 16 are training as nurses. It was a revelation to see the amount of work which Drs Noble and Brown are doing, for in addition to the medical instruction they must devote many hours each day to their hospital and dispensary. The city of Hoshyarpur is situated 25 miles from the railroad and we were obliged to make the journey in a one horse vehicle called a tonga. Few if any foreigners reside in this city. In this place is the Denny Hospital for Women. This institution is under the care of Dr Dora Chatterjee, a native of India, who received her medical education in America. There are only 10 beds in the hospital but they are constantly occupied. The dispensary is open four hours daily and during the year 25,000 cases were treated by Dr Chatterjee. A ward for infectious diseases in connection with the hospital was being planned and by this time is doubtless ready for use. This institution has grown in usefulness and influence and the benefits conferred by it are greatly appreciated by the Indians. This was shown by the action of the municipal committee who have given a grant of $300 a year towards its support and extension.

At Ferozepore, Dr F. J. Newton has an outdoor clinic of about 10,000 cases a year. He related some interesting incidents connected with his work. The natives frequently call the doctor only as a last resort. First of all they try the old wives' remedies, then those of the medicine man or apothecary and finally the barber. They all agree in at least one thing, that is to starve the patient. Milk especially is emphatically forbidden. It creates phlegm which would be fatal. The medicine man begins by feeling the pulse with his four fingers, one after the other, as if he were playing on a flute. He is diagnosing the case. The four humors, their proportions and discords are thus discerned namely, phlegm, wind, heat and dryness. Then he writes a prescription. The more ingredients it contains, the more effective it is sure to be and the greater his reputation for skill. Eight or a dozen component parts would be moderate. Croton oil is one of the favorite ingredients.

Among the remedies suggested by the old women, are numerous charms, *e. g.*, a thin cord of black wool, numbers of shells, tigers' claws, mustard seeds folded within a piece of birch bark or dirty piece of cloth, a sentence or a few words from a sacred book, all these are tied around the neck, wrist or ankle to ward off disease. The dung of certain birds and animals is perhaps most often used and applied to the diseased or injured part.

If these fail the barber is called. He bleeds the patient. If the patient has survived all of these the missionary doctor is called. Sometimes these patients arrive at the hospital to undergo an operation as a last resort with strength and resistance practically exhausted.



AMERICAN PRESBYTERIAN HOSPITAL, MIRAJ, INDIA.

Having met Dr W. J. Wanless in our own country three years ago, it was a special pleasure to see him again in his hospital at Miraj, a city about a day's ride south of Bombay. There is a main building containing both general and private wards. The wards, in all, will accommodate about 75 patients, and there are 12 private rooms. In addition to this building there is an outdoor dispensary, children's ward, students' hospital, and a building close by erected for the use of the families of the patients attending the hospital. A great variety of diseases is seen during the course of each year. The classes of diseases most prevalent in this region are those of the digestive, genito-urinary and ophthalmic systems. Of the in-patients 450 were eye cases. This, however, represents only about half of the eye work done in the hospital, since about this number of patients requiring surgical operations on the eye were subsequently treated as outdoor patients.

On account of the lack of larger hospital accommodations, Dr Wanless is obliged to treat a large number in the outdoor department who really ought to be treated and detained in the hospital.

In a year about 1,700 operations are performed, including in this number 500 operations for cataract and about the same number of other eye operations. The surgical mortality, exclusive of eye operations in which there was no mortality, was 6.6%. It is interesting to note that appendicitis is rare in this region. There were in 1906 only 14 operations for appendicitis. Seven of these operations were performed on missionaries. There were 78 abdominal operations, including 17 for gastro-enterostomy, and since the report was published many more of these operations have been done. There were 47 operations for vesical calculi.

In connection with the hospital Dr Wanless has a medical school. The third class completed its four years course in April, 1907. This class began with nine students, six completing the course. Considering the handicap of studying in a foreign language, the studies being all in English, and the natural lack of aptitude for foreign methods generally inherent in the people of India, they have made satisfactory progress in their efforts to acquire knowledge of medical science. Now that this class has completed its requirements the members will be connected with the mission and a new class will be organized.

The last hospital visited on our trip was that in charge of Dr F. Van Allen, in Madura. On account of the absence of Dr Van Allen, who was on furlough in America, we were unable to see the hospital in actual operation. It is finely equipped and the larger part of the money for its construction was contributed by the natives. We were told that in the previous year 400 patients were treated in this hospital and 23,000 in the outdoor department. Almost directly opposite from this hospital is a woman's hospital in charge of Miss H. E. Parker, M. D. Here also about the same number of women are treated each year.

In all these lands the most encouraging feature is the apparent desire upon the part of the natives to take an increasingly greater interest in the hospitals and medical education, and in this effort may have our hearty cooperation and support.

The Cleveland Medical Journal

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EDITORIAL

Why Should a Physician go to the United States Senate?

The candidacy of Dr Charles A. L. Reed for the United States Senate prompts us to present certain obvious reasons in favor of the services of physicians in that body.

In the first place the United States Senate is presumed to be a representative body, that is to say, a body which is fairly representative of the people. To be representative in fact as well as in name it is important that its membership shall be made up of men who belong to diverse social groups as well as to diverse geographic areas.

In this way alone can the Senate, or any other legislative body, have within itself that ample diversity of viewpoints that will insure to it the most comprehensive intelligence in dealing with correspondingly comprehensive public questions. That the Senate is not thus constituted at the present time is shown by the fact that, according to the last Congressional Directory, out of 162 occupations recognized by the United States Census, only

19 are represented in the composition of the Sixtieth Congress, as follows:

	Senate	House of Representatives	Total
Lawyers	76	273	349
Manufacturers	4	15	19
Farmers	2	19	21
General Business	2	30	32
Bankers	2	14	16
Mine Owners	1	3	4
Editors	0	13	13
Civil Engineers	0	2	2
Army	1	0	1
Navy	0	2	2
R. R. Officials	0	3	3
Carpenter	0	1	1
Lumberman	1	0	1
School Teacher	0	1	1
Miller	0	1	1
Real Estate	0	2	2
Politicians	0	8	8
Insurance	1	4	5
Physicians	1	4	5
	91	394	486

This table shows that society, so far as its various occupations are concerned, is not justly or equitably represented in either branch of the Congress but especially in the Senate in which there are represented but ten of the one hundred and sixty-two recognized groups of which society is composed. And it will be observed that the representation of the legal group is so disproportionately large, that only fifteen other groups, if represented by a single member for each of them, could by any possibility find a place on the roster of the Senate. This is not fair. It is not a square deal. We are not finding fault with our friends of the legal fraternity who have done so much to fashion our institutions and to give form to our laws. There has always been and there is now abundant reason why that learned profession should be largely and ably represented in this great law making body. We are simply contending that other professions and occupations are not doing their duty.

In the past, in particular, questions of legal form and technical detail have been very important and it is to these questions that the lawyers in Congress have naturally given much valuable attention. But the legislation of today is dealing more and more with the actual elements of our great diverse social problems, to deal with which intelligently requires that the legislative body itself shall be made up more and more of the great diverse elements of society itself.

A physician is best calculated to meet this requirement because he is in closer personal contact with actual social conditions—with those conditions as they exist in the homes of the people—than any other man in the community. He, therefore, comes nearer being, in point of knowledge, experience and sympathy, the actual representative of the people than any other person among them. This is as it ought to be, for while more members of more social groups ought to go to the Senate, no member of any group ought to go as the representative of that group as against any or all other groups. It ought simply to happen that there should be a more diversified representation of the people, and it ought to happen that more physicians should go as the representatives of the people.

This becomes strikingly apparent when it is remembered that the next great problems in constructive statesmanship are those which appeal for solution to the special intelligence of medical men. Both political parties, as the result of the initiative of the medical profession, and of Dr Reed in particular, stand pledged to the creation of an improved National public health administration. That this is needed is shown by the fact that more than a half million people die from preventable diseases each year in this country, which, if expressed in money, could show that the loss thus entailed would be more than two billions of dollars annually.

The great National agency that is to grapple with this problem should be fashioned by a Congress that enjoys the membership of an adequate number of men who are technically familiar with every element of that problem—and such men are to be found only within the medical profession. The sanitary problems of our dependencies and of our seaboard require similarly efficient laws that can spring only from similarly intelligent sources. The problem of pure food and drugs has not been solved by the preliminary legislation that has so far been secured. These and dozens of other similarly important questions have not been solved because there has heretofore been, and are now, so few physicians in Congress, and they will not be solved, nor will they stay solved, until a larger number of broad minded medical men are sent to that body.

But in urging this point let it not be construed as an example of special pleading—the kind of physician whom we are describing would be just as efficient and even more efficient than the average man in dealing with general problems of legislation. To this efficiency he would add the special efficiency necessary to deal with the special problems that are now pressing for solution —problems that are more important to the people of this country than are many that are ordinarily labelled as strictly political.

The Babies' Dispensary and Hospital of Cleveland

On October 27, 1908, the second annual meeting of the Babies' Dispensary and Hospital of Cleveland was held. The various reports read gave undoubted proof of the rapid growth of this institution and the good work accomplished by it. The total number of new patients during the past year, from October 1, 1907, to September 30, 1908, was 1,214 as compared with 568 for the first 15 months of the institution's existence.

As many as 56 patients attended in a single day. The total attendance for 1908 was 6,256 and 2,497 for 1907. The Babies' Dispensary Nurses made 8,503 visits during the year, and 4,228 during 1907. Milk deliveries numbering 19,260, and of these 5,208 at a cost of $558.60 as absolutely charity, were made within the past year as compared with 8,946 for the first 15 months. Thus the rate of growth has been over 100%.

The death rate has been but 8.8% which is remarkable considering the severe summer of 1908.

Of the 1,214 patients, 123 or 11.3% were discharged sooner or later, because they could afford to have their own physician; an additional 108 were not accepted for the same reason. In other words, out of a total of 1,322 patients, 233 or 17.4% were either not accepted or discharged soon after their admission because they could afford to have a private physician. Fifty-seven of the 1,214 cases were referred to the dispensary by general practitioners, this is a decided increase over the number during 1907, but it is by no means as large as it should be. An institution which is strictly limiting its work to the needy and refusing to care for those able to pay is a valuable help to the entire medical profession of Cleveland, but especially to the general practitioners. Therefore they should reciprocate by sending all babies of needy families to the dispensary, not only for actual medical care but principally for prophylactic advice, even though the child be perfectly well. This is, in reality, the first work of a babies' dispensary. A visit to the institution, which may be made at any time, would remove all doubt in the mind of anyone as to the real value of this charity.

The International Congress on Tuberculosis at Washington

This Congress recently held at Washington under the presidentship of Theodore Roosevelt was by far the greatest and most interesting of its kind to date. The poor and inadequate building in which the Congress met was about the only bad feature that could be noticed, but it was so marked that the urgent need in our National Capitol of a large, adequate meeting-place for congresses of this size and type was forcibly impressed upon everybody.

The exhibits of sanatoria, dispensaries and the like showed nothing new. They did, however, prove that many of our cities and States now recognize the importance of the campaign against tuberculosis and have made giant strides within the last few years toward the coveted goal.

The greatest interest, however, was aroused by the discussion of the importance to be attached to infection of human beings with the bovine tubercle bacillus. Robert Koch stood firm in his contention that as yet no case of pulmonary consumption, from which the bovine tubercle bacillus could be isolated, had been reported which could withstand criticism. Eleven-twelfths of all deaths caused by the tubercle bacillus were of the type of pulmonary consumption and of the remainder only a part could be due to the infection with the bovine tubercle bacillus. Therefore he maintained that the greatest attention must be given to the cases of pulmonary consumption which were the greatest source of infection. The great importance, then, of homes for advanced cases and especially of the compulsory notification of the Board of Health of each community of any case of tuberculosis by the attending physician must be obvious to everyone. All praise was given by Robert Koch to Dr Biggs, of New York, for the great work done by him in our metropolis, but especially for securing the enactment of the law calling for notification of all cases of tuberculosis. Koch admitted that bovine tubercle bacilli had been found in the cervical glands and the intestinal tract, but expressed his belief that they remained localized. Although practically everybody else opposed Koch to a more or less degree, he stood firm in his conviction based upon positive scientific facts. He stood for cold exact science and it is only upon such a firm basis that a positive clear understanding of the entire question will finally be attained. For his stand he is to be admired and will be constantly more admired the more we consider the facts as they are.

The net result of these discussions will be to continue the fight against both human and bovine tuberculosis, for even though the bovine tubercle bacillus may cause but few deaths, it is much to be desired from a standpoint of economy that our cattle be free from the disease, whether it harms us bodily or not.

Cultivation of Protozoa

The progress of parasitology is well exemplified in the recent advances in the cultivation of animal parasites of various types.

When, not so long ago, it was found that protozoa bore so large a share in the causation of disease, the chief obvious difficulty to the satisfactory study of their life history lay in the absence of artificial methods of cultivation. In the study of bacteria these methods make it comparatively easy to study the relations of the different organisms to disease, and such organisms as cannot be cultivated offer the chief difficulties to investigators. Many of the difficulties have, however, been overcome by the careful work of the last few years, and general principles have been established on which further advances may be based. The growth of flagellates of the Trypanosome type has been found to be fairly satisfactory in mixtures of agar and sterile blood, and the methods of Novy and his associates have made the study of this group of organisms much simpler. In another group of parasites, the Amebæ, it is found that although they are unable to develop for any length of time on the ordinary artificial media, this is because they require living food, and this difficulty has been obviated by growing them in combined culture with the variety of bacteria of which they seem most fond. In this way the postulates of Koch that an organism must be grown in pure culture and that inoculation of such culture must reproduce the disease are made possible for a large group of parasites to which they could not be made to apply before these developments of the last few years. Where one type of organism is found to be cultivable, the probability that other more or less closely related types may also be susceptible of cultivation is of course enormously increased and since, in general, the fight against any infectious disease is efficient in direct proportion to our knowledge of the source and the life history of the contagium, the importance of these purely laboratory studies to the science of preventive medicine can hardly be exaggerated.

Cause of Loco-disease

Among the many valuable contributions of the United States Government bureas to medical science is the recent work of Crawford in regard to the so-called "loco-disease" of the Western plains. As is well known this is a sort of insanity, usually resulting fatally, occurring in horses and cattle, and long since supposed to be due to the eating of a certain weed known as "loco weed." Some years ago a commission was appointed to investigate the disease in Montana, and reported in a rather incomplete manner that the symptoms appeared to be due to the presence of worms in the nasal passages of the animals affected. Crawford took up the task from another point of view, and considers that the symptoms are those of barium poisoning. He has completed his chain of reasoning in a very scientific and convincing manner, with careful control of his results. Where the soil contains barium this plant is able to take it up, as is proved by the finding of notable quantities in the ash of the leaves and stem. Animals fed on these leaves develop the disease, while those fed on the same weed, grown in a barium free soil, do not. Moreover animals fed with other material containing barium in quantities corresponding to those found in the loco weed also develop the symptoms.

This places the Western loco on a firm scientific basis, as has been the case with many another apparently mysterious disease.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Sulphonal: James E. Talley, in the *American Journal of the Medical Sciences* for October, reports as to the prolonged use and toxic action of sulphonal. In the case noted, a woman had taken nightly from 10 to 20 grains of sulphonal, and any attempt to change to another narcotic always ended in a return to the sulphonal. She had taken on the yearly average at least a half pound (avoirdupois) of sulphonal for 12 years, over five and one-half pounds in all. She had suffered no ill consequences so far, and the urine was free from hematoporphyrin. Considering the time that sulphonal has been in use and frequency of its use, especially in asylum practise, the number of cases of poisoning by it are comparatively few. However, the cases reported are sufficiently numerous to make us cautious in dosage, and especially in the length of time of exhibition of the drug. Cases show varying degrees of susceptibility, and occasionally idiosyncrasies toward the drug may appear. Among the fatal cases Petitt reports that of an insane woman, who succumbed to poisoning by 30 grains given in two doses about one hour apart. The time varied in different cases from weeks to months of fairly constant use of average doses before the development of symptoms of poisoning which proved fatal. The symptoms of poisoning are epigastric pain, nausea, vomiting, acetone odor to the breath, usually constipation, low temperature, shallow respiration, feeble pulse, urine scanty, dark reddish due to hematoporphyrin and which may or may not contain albumin and casts, ataxia, delirium or stupor, gradual development of motor and sensory paralysis and death usually from respiratory failure or sometimes from cardiac arrest. A point in prognosis is that all the cases that have recovered have had gastro-intestinal, nephritic, respiratory and circulatory symptoms, but no nervous symptoms beyond stupor and ataxia. The development of paresis always runs on to paralysis and death. One should keep the bowels active while giving the drug, and it is best to discontinue its use for a time, changing if necessary to other hypnotics.

Tetanus Antitoxin: The *Medical Review of Reviews* calls attention to the fact that up to October 25, 1907, there was no official standard for testing tetanus antitoxin in the United States. Each manufacturer had his own arbitrary method of determining the potency of his products. On that date, however, an American unit was officially promulgated by the Secretary of the Treasury on the recommendation of the Surgeon General of the Public Health and Marine Hospital Service. The unit is defined as "ten times the least quantity of antitetanic serum necessary to save the life of a 350 gram guinea pig for 96 hours against the official test dose of a standard test-toxin furnished by the hygienic laboratory of the Public Health and Marine Hospital Service." The Society of American Bacteriologists in December, 1906, decided that the minimal immunizing dose for a case of possible tetanus infection should be 1500 units. Since the unit has been established there has been uniformity in the product, and a decided increase in potency.

Cerebrospinal Fever: Henry Koplik, in the *Medical Record* for October 3, states that it is too often apparent, in considering the methods of therapy of any disease, that we sometimes, in the presence of some exceedingly favorable results, lose sight of the natural course of the affection. In no disease is this more common than in cerebrospinal meningitis. He reports a series of cases treated by the serum, asserting that it makes quite a difference how such a therapy is applied. A therapy, no matter how brilliant, applied by inexperienced hands, is not given the same chance as in the hands of those who are skilful. Any form of therapy will at first labor under a great disadvantage, for lack of skilful application and method. He does not believe in the dictum that the earlier the puncture the better, as a patient, to be punctured, must show symptoms of pressure and indications of an increase of cerebrospinal fluid. There must be not only delirium and stupor but distinct signs of increase of fluid in the ventricles of the brain as shown by percussion of the skull. When he gets the so-called MacEwen percussion note, however slight, in a patient who evinces the symptoms of cerebrospinal meningitis he proceeds to puncture. He inserts the needle in the median line in children and adolescents and withdraws the fluid until he thinks the pressure is approximately normal in the rachidian space. He then introduces the serum, not with a syringe but with a funnel. He has found that a small glass funnel holding about 20 c. c., as advised by Quincke, is the best method of introducing the serum or for that matter any fluid into the subarachnoid space and he thus avoids any accident which might result from the use of a syringe. The pressure exerted by a syringe at all times against the respiratory and vascular pressure is certainly not as gentle or safe a mode of introduction of serum as allowing the serum to flow into the canal. The temperature is scarcely a guide, but rather the general condition of the patient, and especially the presence or absence of hydrocephalus. The temperature in some of the cases fell, after the injection of the serum, by crisis from 104° to 98° and in one by lysis from 103° to 99°. In one case the puncture had no effect. The amount of serum injected varied and in a general way the quantity injected equaled that of cerebrospinal fluid withdrawn from the patient. Some patients received one injection, others as many as four, according to the case. Of 13 cases treated with the serum, two died, but he thinks it would be rather premature and unfair to draw conclusions as to the serum until we have seen a larger amount of material and until we have tried it in an epidemic of the violent type as occurred in 1904 and 1905. On the other hand it may be said that the serum of Flexner not only makes a very favorable impression but is certainly a factor which cannot be excluded from the therapy of cerebrospinal meningitis, no matter what our subsequent conclusions may be. It does appear that with the serum, as we perfect it, we may have an improvement in the percentage of recoveries. Although he has saved 11 cases out of 13, judging by the results obtained elsewhere we may still meet with cases which we cannot save by the serum, and it would certainly be very unreasonable to expect a continuance of so high a percentage of recoveries as he has shown.

Pertussis: In the *International Clinics* (Vol. III, Series 18), Paul L. Tissier considers the treatment of pertussis by fluoroform. Bromoform gives excellent results and would have undoubtedly become the favorite remedy for pertussis, were it not so dangerous. In the last six years he has treated a large number of cases of pertussis with fluoroform water. During the last four years the number has been 117. In not a single instance did any accident follow, even when the prescribed dose was largely exceeded. This harmlessness of the remedy has also been reported by all who have used it. It is difficult to fix the exact duration of pertussis, but exclusive of the catarrhal stage the average duration is four or five weeks although many cases go beyond that time. With fluoroform the shortest case he has had was one of 10 days in a child of seven. Stepp has reported one of six days. In small family epidemics, in which cases can be treated from the start, the coughing fits are almost entirely done away with and in a week the disorder is ended in many instances. By the end of the first week, as a general thing, the disease has lost all character of gravity and it is quite an exceptional thing not to have recovery in a month. All of his cases recovered and in a word this 2.8% fluoroform water is a remedy that is easily accepted, has no risks, and gives results of such a nature in pertussis that he is almost inclined to speak of it as a "specific treatment." As regards the question of dose, he gives children, up to the age of two years, one drop after each attack the first day, two the second, three the third and so on without exceeding, as a general thing, five grams (100 drops) of fluoroform water daily. Between two and four years, he gives 10 drops four times a day, and increases gradually up to five or 10 grams *per diem.* Above that age it is possible to go to 15 grams and with adults to 3 grams daily, given in teaspoonful doses. The remedy is not toxic, can be given alone or in water or milk and should be kept in glass bottles.

Chromium Sulphate: In the *Monthly Cyclopaedia and Medical Bulletin* for September, Louis Kolopinski writes upon the uses of chromium sulphate. As to dosage, the drug causes no toxic symptoms and the original dose of one to four grains he has increased to eight grains three or four times a day. Thirty to 40 grains at one time result in no unusual sensations except a very mild vertigo or lightness in the head. A four grain tablet or pill is the most convenient form and it is better taken after than before meals. Occasionally the unabsorbed residue colors the feces. The drug dissolves in water very slowly and no unpleasant by-effects have been observed in patients who have taken it continuously for as long as four or five years. Of the diseases in which it is successful neurasthenia, exophthalmic goiter and locomotor ataxia are of particular interest and importance and the results are speedy and striking. In neurasthenia it deserves the unique position of being the only drug which is curative, dispensing with all such treatment as rest, travel, diversion of mind, dietetics and physicomechanics. In exophthalmic goiter, the rapid pulse and churning motion of the heart are invariably reduced to nearly normal: the pulse remains so. The nutrition of the body is bettered, the trembling ceases, likewise the state of nervous erethism and irritability. The bulging eyes and struma recede slowly. The cases treated have been, for the greater part, old neglected or mismanaged ones. Fresh cases yield prompt results and he cannot believe that surgical operation in this disease is proper. Locomotor ataxia is curable with the drug and the more recent the case and the earlier the treatment, the quicker the result. The neuralgic pains and the several forms of crises, especially the epigastric, succumb to its use. Hypnotics, anodynes and antineuralgics are not administered. He has seen a number of first stage cases in which all symptoms vanished and no further ones appeared. In the third stage most decided improvement is possible and the patient's chance of betterment is good. The essential action of chromium is shown in the second or atactic stage by permanently removing the incoördination of muscle action.

Hypnotics: *Merck's Archives* for September considers the recent hypnotics, and while it is the consensus of opinion of nerve specialists that mild forms of sleeplessness, at least, should be combated by general hygienic, dietetic and hydriatic measures, there are nevertheless many cases in which the use of drugs is absolutely unavoidable. The mildest of these are undoubtedly the bromids and the valerian preparations which are often efficient in cases in which a mere nerve sedative is required, but as often fail in the mildest forms of insomnia. A gap between the bromids on the one hand, and the true hypnotics on the other, has been filled with the introduction of bromural. It seems to be a harmless and almost ideal remedy for uncomplicated insomnia of milder grade and for numerous affections depending on increased irritability or weakness of the nerves, but it can never replace the true hypnotics which are indispensable in the severer grades of insomnia, even when there is no definite organic lesion. Only a short time ago, sulphonal, trional and tetronal were the most popular members of this group but their slow action and occasional after-effects soon gave the impulse to a search for something better. The result was veronal and except with enormous doses no mishaps have ever followed its administration, even in cases in which it was given almost daily since its introduction. It could thus be regarded as ideal were it not that it is comparatively insoluble and thus slowly absorbed, so that the patients often complain of slight mental sluggishness the following day. To overcome this, the sodium salt of veronal soluble in water to the extent of 20% is now upon the market. The action of veronal-sodium is exactly the same as that of veronal but if given on an empty stomach, so that it does not come in contact with free acid, there will be a more rapid absorption and the patient will go to sleep more quickly and generally awake without any depression. It is also claimed that it can be given with good results per rectum and also subcutaneously and that it is of value in the treatment of morphinism. The dose is the same as that of veronal. A case is reported by John E. Clark in the *Journal A. M. A.* for October 10, in which he prescribed 12 powders each containing 10 grains of veronal. The patient, a man, took 10 powders, 100 grains, within one hour. He slept over 48 hours and made an uninterrupted recovery.

Proprietaries: Solomon Solis Cohen, in the *Journal A. M. A.* for September 19, summarizes the main objections to the use of proprietary mixtures as: (1) They are not subject to standard regulation and may arbitrarily be varied. (2) They profess to some degree of secret excellence, some mysterious method of collocation or perhaps of flavoring. Such pretences are usually false and not to be encouraged when true. (3) Perhaps the most serious objection, and from the viewpoint of science it oversteps all others, is that proprietorship makes unbiased discussion and honest reports difficult. This applies not only to mixtures but to "controlled" drugs in general. There is another kind of proprietorship, however, that he accepts. It is a worthy one and the only worthy one. When it is known that a certain official or unofficial drug varies much in quality as found in the market, and that certain manufacturers or dispensers put forth a trustworthy product, then he does not hesitate to specify the personal or firm name of such a manufacturer or dispenser. He again summarizes: (1) Ready-made mixtures of rigid formula, secret or known, proprietary or public, are objectionable. (2) The National Formulary and the U. S. P. should make all mixtures optionally elastic. (3) Such proprietorship as is expressed in the name of an individual pharmacist or dispensing manufacturing firm or corporation known to be generally careful and trustworthy, or to have devoted special attention to certain official or unofficial preparations of fully known character, is legitimate, and the name of such persons, firms or corporations may with the highest ethical propriety be specified in prescriptions. (4) Preparations tainted with secrecy of any kind should be avoided absolutely. (5) Known preparations that can be obtained of one manufacturer only, and which are physically and chemically what they purport to be, may be prescribed without impropriety, however much we may and do deprecate that fault in our laws which permits such monopoly in medicinal agents. The law should be so altered as to abolish this form of proprietorship in medicines.

Typhoid Fever: Victor C. Vaughan, in the *American Journal of the Medical Sciences* for September, treats of the specific treatment of typhoid fever. He asserts that there is no satisfactory evidence that the typhoid bacillus produces a soluble poison and it seems to him that the time has come for us to recognize that the mechanism of immunity is not the same in all infections and intoxications. There are at least three forms of immunity: Antitoxic immunity, phagocytic immunity and lytic immunity which is frequently designated as bactericidal or bacteriolytic immunity. There is no antitoxin for the typhoid poison; phagocytic action certainly is not a marked factor in the natural recovery from this disease, and he shows what can be made out of lytic immunity in the study of the nature, progress and recession of typhoid fever. From his findings he concludes that in the animal body the typhoid or colon proteid or egg-white or serum albumin or serum globulin, or in short any true proteid, is split up into residue and poison, much the same as in the retort, but much more completely and perfectly. While the poison that kills in typhoid fever is the same in essence as that which we obtain from the typhoid proteid, the residue that sensitizes is also the same whether it be obtained by chemical cleavage *in vitro* or by the more perfect chemical cleavage *in vivo*. If typhoid fever could be recognized in its early stages when sensitization and cleavage of the bacillus is only local and imperfect, then he would hope for great advantage in its treatment with the residue. This soluble sensitizing agent, acting promptly as it does, might be expected to split up the bacilli before they become so numerous and the abortion of the disease might be easily brought about. In this stage small doses of the residue, not more than 50 mg., should prove of marked service. It is to be hoped that some means for the early and positive diagnosis of this disease will soon be discovered. In conclusion he believes that, in so far as he can see today, it is not probable that we will ever get an antitoxin for the treatment of typhoid fever comparable with that for diphtheria, but that the residue may be of service, especially in preventing relapses, and if we can find some method of early diagnosis, it may prove of value in aborting the disease.

Magnesium Sulphate: *The Medical Council* for October notes the fact that the newest and most interesting feature in therapeutics today is the use of magnesium sulphate in the topical treatment of acute and subacute inflammations. The results are such that doctors quickly become enthusiastic in its utilization. Large quantities of Epsom salts in saturated solution are now being employed and the routine work of many hospital departments and clinics is completely changed, especially in those devoted to surgery and dermatology. It is now largely employed in cases of ivy-poisoning, erysipelas and in fact in inflammations generally. The *modus operandi* remains to be worked out, a fact of minor importance when a remedy is so well known and harmless. Henry Tucker has employed the drug locally in over 700 cases of local inflammations of various kinds and with uniformly good results. He recently reported 54 cases of erysipelas so treated, some quite severe, with two deaths. The saturated solution was applied on a facial mask consisting of 15 to 20 thicknesses of ordinary gauze, extending beyond the area involved, and removed only once in 12 hours.

Academy of Medicine of Cleveland

CLINICAL AND PATHOLOGICAL SECTION

The fifty-third regular meeting of the Clinical and Pathological Section was held Friday, October 2, 1908, at the Cleveland Medical Library, W. G. Stern in the chair.

C. E. Ford presented a man with a large cystic tumor in the epigastrium, probably a hemorrhagic cyst of the omental bursa, which developed after a traumatism. Operation had been refused and the diagnosis was in doubt.

J. Stotter exhibited three cases of eye injuries, the first a perforating wound due to a piece of steel, the second a perforating wound of the cornea caused by the point of a screwdriver, prolapse of the iris occurred and required iridectomy. The third case showed a perforating wound of the cornea. Recovery had been satisfactory in all instances.

E. O. Houck showed a placenta of very firm consistency removed from a patient suffering from toxemia of pregnancy; discussion by J. J. Thomas.

The program was as follows:

(1) Acute Pericarditis following Removal of Gonorrheal Pus Tubes, J. L. Bubis (to appear in full in the JOURNAL). Discussion by R. H. Sunkle.

(2) The Early Care of Eye Injuries, Edward Lauder, who said in part: The family physician, who is usually first consulted, should recognize the importance and seriousness of even the most trivial injury to such an important organ as the eye. Injuries are divided into (1) contusions, (2) abrasions, (3) lacerations, (4) cuts, (5) penetrating wounds, (6) the lodgment of foreign bodies, (7) burns (both from chemicals and overheated substances). A thorough knowledge of the conditions present should be obtained at the earliest possible moment. At no time should a probe enter the eye for purposes of exploration of the penetrating wound. In all cases of injury from a flying foreign body, such as iron, brass, glass, etc., all means at our disposal, including the X-ray, should be used to determine the presence or absence of the foreign body, and if found to be present immediate removal is essential to the integrity of the eye. Injuries to the lids and orbital tissue are not of such serious import, and provided infection does not occur healing usually takes place rapidly. Cuts of the cornea, even though superficial, are liable to infection and may readily produce blindness. Penetrating wounds with or without the presence of a foreign body are more or less serious according to the situation and depth. If a foreign body be lodged somewhere in

the eye then, with rare exception, a total loss of the affected eye, and very often that of the uninjured eye, may be anticipated, unless the foreign body be removed. Implication of the uninjured eye, known as sympathetic ophthalmitis, is very liable to occur when infection follows the embedding of the foreign body in the injured eye. The infection causing the sympathetic ophthalmitis is transmitted from the injured eye to the uninjured eye either by way of the optic chiasm (which is improbable) or through the general circulation of the blood (which is probable). It acts on the tissues of the sound eye and produces an inflammation similar in nature to the original condition. The most common interval for the appearance of the sympathetic ophthalmitis is four to six weeks after the injury, but it may occur as early as three weeks, or at as late a period as 20 years.

As to treatment. Touching the injured surface with carbolic acid applied on a small tightly twisted cotton swab and followed immediately by alcohol applied in the same manner is very effective. Care must be taken that a drop does not hang at the end of the swab, but that the cotton be only moist, else the application would be made on too great a surface of the cornea. In some cases in which the infected area is small it may be cauterized with the point of a platinum probe or knitting needle heated in a spirit lamp flame. The eye should afterwards be frequently cleansed with a saturated solution of boracic acid or with a 1-5000 solution of bichlorid of mercury. The frequency of this cleaning should vary according to the severity of the case, from one to four hours. The systematic and persistent application of cold to the eye, whether infection has become active or not, is to be highly commended. The inhibiting power of cold is very great and in many cases its effect is abortive. Its use should be begun at once after the first dressing and continued until the danger of infection is past, or until its effects have proved unavailing. These suggestions in regard to treatment must be regarded as applicable especially to recent cases. Discussed by W. E. Bruner and C. C. Stewart.

(3) Traumatic Asphyxia—Report of a Case (illustrated with lantern slides), R. A. Bolt. (To appear in full in the JOURNAL.)

ACADEMY MEETING

The sixtieth regular meeting of the Academy was held Friday, October 16, 1908, at the Cleveland Medical Library, H. W. Rogers in the chair.

A resolution calling for the establishment of a Medico-Legal Section of the Academy was presented and referred to the Council for action.

A committee to nominate officers for the ensuing year was appointed, consisting of J. J. Thomas, chairman, J. C. Darby, T. A. Burke, A. S. Storey and W. H. Weir.

The program was as follows:

(1) Serum Treatment of Epidemic Cerebrospinal Meningitis, L. W. Ladd. (Appearing in the *Journal A. M. A.*, October 17, 1908.) Discussed by T. A. Burke, R. H. Birge and G. I. Bauman; closed by L. W. Ladd.

(2) Parapsoriasis, so-called, with Report of Cases and Histologic Findings, W. T. Corlett and O. T. Schultz. The literature of the parapsoriasis group was reviewed and three cases were added. The first good clinical characterization of the group was given by Unna, Santi and Pollitzer under the name parakeratosis variegata. Other descriptions followed by Pinkus and by Colcott, Fox and Macleod under the title used by Unna and his collaborators, by Juliusberg under the title pityriasis lichenoides, and by Brocq under the title erythrodermie pityriasique en placques disseminees. Under the latter title cases have been described in this country by J. C. White and by C. J. White. Despite the varying clinical nomenclature used Brocq has grouped the conditions under the term "les para-

psoriasis," and thinks all the reported cases have much in common clinically. The three cases added by Corlett correspond in general to the characteristics of the group. A large number of lantern slides were used in order to give a comparison with true psoriasis, with certain syphilitic secondary eruptions, and with seborrheic eczema. In Corlett's cases the disease had been of some years duration, the discrete lesions looked rather much like psoriasis lesions and they were resistent to treatment. The lesions were small, but showed some variation in size, they were slightly raised and varied from a bright red to a bluish red in color. The surface was covered with a fine scale, which did not leave any bleeding points upon removal. From the other conditions mentioned the disease differed in that the lesions did not tend to spread peripherally, they did not become vesicular or ulcerated, and they resisted treatment.

O. T. Schultz reviewed the pathology of parapsoriasis and agreed with Brocq and with Bucek in their conclusions that the various members of the group, no matter under what clinical term reported, are very much alike histologically, and that they show more points of resemblance than they do of difference. The published descriptions of the pathologic changes show very great uniformity and agreement. The changes most characteristic of the group are the formation of swollen, nucleated horny lamellæ which tend to remain united to form scales, the disappearance of the granular layers of the epidermis, marked edema of the epidermis, dilatation of the capillaries of the papillæ and edema of the stroma of the latter, and a moderate degree of lymphoid infiltration of the papillæ and of the epidermis. Material removed from one of Corlett's cases shows all of these changes as well as certain others not before described. Of the latter, changes in and about the deeper venules of the corium are most striking and important. In the earliest stages these vessels show endothelial hypertrophy and hyperplasia. These changes are followed by and become associated with perivascular change, namely, lymphocytic infiltration and connective tissue proliferation. The association of these various changes leads finally to obliteration of the lumina of the vessels, and to this obliteration Schultz ascribes the capillary dilatation and the edema of the corium. The epidermal changes are all secondary to these changes in the corium. Corlett's case also shows involvement of the nerves of the corium. The nerves are considerably increased in diameter. This increase in size appears to be due to a proliferation of the nuclei of the sheath of Schwann and to an increase in the amount of the internuclear substance of the sheath. Whether these nerve changes are antecedent to the vascular changes, or whether the changes in the vessels and in the nerve are both due to some cause as yet unknown, cannot yet be decided. From true psoriasis the condition under discussion differs chiefly in that the latter is degenerative, whereas the former is progressive and hyperplastic in nature. It differs from seborrheic eczema chiefly in that the latter shows more of the evidence of an actue inflammatory process. Discussion by L. W. Ladd and closed by W. T. Corlett and O. T. Schultz.

SPECIAL ACADEMY MEETING

A special meeting of the Academy was held Friday, October 9, 1908, at the Cleveland Medical Library, H. W. Rogers in the chair.

The program was as follows:

(1) Experiences with the Cutaneous Tuberculin Reaction and the Findings in Two Hundred Postmortems on Children (appearing in full on page 585), Clemens von Pirquet, Vienna, Austria.

(2) The Differential Diagnosis between Human and Bovine Tuberculin, E. Detre, Buda Pest, Austria.

By means of charts the speaker described and demonstrated his method of diagnosing whether the tuberculosis in a given individual is of human or bovine origin. At the beginning of his work he experimented with the subcutaneous injections of the filtrates of human and of bovine tubercle bacilli. He has found that the human organism reacts much more sensitively to these than it does to Koch's tuberculin. Since von Pirquet described his method of cutaneous application of tuberculin, Detre has limited his work to this test. His routine method is to put a drop of Koch's tuberculin on the flexor surface of the forearm; about one inch below this a drop of the filtrate of human tubercle bacilli, and again one inch below this a drop of the filtrate of bovine tubercle bacilli. Then the skin covered by these drops is abraded. In 24 hours the reaction takes place if the individual has tuberculosis. In such a positive case the infection is of human origin if the abrasion in the skin covered with human bacilli filtrate shows a larger, more red and more definite papule than is seen (if there is any seen at all) at the abrasion of the skin covered with the filtrate of bovine tubercle bacilli; and vice versa for a bovine infection. Sometimes he found that both lesions were of about equal size and appearance and then concluded that it was, in all probability, a mixed infection. The Koch's tuberculin is used by him simply as a "general indicator." He has found that nearly all bone and gland tuberculosis gives a bovine reaction. Discussion of these papers by J. H. Lowman and J. P. Sawyer.

THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The thirty-sixth regular meeting of this Section was held Friday, October 23, 1908, at the Cleveland Medical Library, A. R. Baker in the chair.

E. Lauder presented a patient with detached retina. In this case there was a history of a foreign body having been in the eye but no history of injury. The detachment lay in the lower field of the right eye and the vision when first seen was 6/200; about five days ago it had arisen to 20/200.

W. E. Bruner presented a young lady with symmetrical detachment of the retina of each eye. The trouble had existed for two or three years, being primary in the left eye and later extending to the right. In discussing the case A. R. Baker called attention to the fact that these detachments may be due to sarcoma of the choroid. Further remarks were made by J. E. Cogan and D. B. Smith.

C. C. Stuart presented a case of interstitial keratitis in a lad of 11 years. He first developed rheumatism of each knee, in the month of July, following exposure while bathing, and interstitial keratitis developed as a secondary complication about one month later. From several observations he was inclined to believe that the deposits lay in the layer of Descemet rather than in the substantia propria and it was his personal belief that the case was probably one of uveitis secondary to synovitis of the knee-joint with effusion. This effusion was a later development of the condition in the knee. In the discussion E. Lauder related a similar case in a lady with rheumatism who first had iritis and later an interstitial keratitis. J. E. Cogan mentioned a patient who was operated upon for appendicitis and later developed a superficial keratitis (Fuchs) in one eye. W. E. Bruner referred to a patient with choroiditis who had also a lesion in the knee-joint. A. R. Baker thought it quite common to see trouble of the knee-joint with interstitial keratitis.

J. N. Lenker presented a patient who had been formerly presented before the Section with an obscure growth in the larynx. This was later removed and found to be a flat-cell papilloma.

The program was as follows:

(1) Unusual Complications Following an Adenotomy, Wm. B. Chamberlain. Enlarged tonsils and adenoids were found in the patient, a girl of nine, on April 14, 1908. She was distinctly below par, had a

typical adenoid expression and was nervous and irritable. Barring some retraction the ears were normal though there was a history of progressive deafness with occasional pain. April 16, the adenoids and tonsils were removed under ether. The ears were not examined on this day. The next day the child complained of severe pain in the right ear. The pain increased and there was some tenderness over the mastoid. A paracentesis was done on the right side following which there was profuse discharge from the middle ear but the pain and tenderness increased. There was little or no swelling and the temperature ranged from 100° to 101° F. May 6 the mastoid was opened and the antrum found full of pus, the cells and cortex were uninvolved. For two days the temperature was practically normal, then there was a distinct chilly sensation, profuse sweating, headache and a remitting temperature with maximum of 105° F. The wound was apparently doing well. Leukocytes were 12000 and the polymorphonuclears 75%. The temperature remained septic for several days and the possibility of a sinus thrombosis necessitating a second operation was considered. Meanwhile a beginning pneumonia of the right base was discovered and the sinus operation was deferred. Temperature gradually became normal and the child went home at the end of the third week when the tympanic membrane was healed but the mastoid was still discharging. In spite of persistent and careful treatment this refused to heal, bare bone was discovered at the bottom and a secondary operation was advised. The patient had gained in weight and strength, her health was better than it had been for years and she was apparently strong and well. On September 20 the mastoid was opened. The antrum was found filled with soft, spongy granulations extending through the aditus and into the attic. The posterior wall was distinctly necrotic requiring a radical mastoid operation, which was done. The tympanic cavity, attic and antrum were filled with spongy granulations. Every cell in the mastoid was opened but all were normal. A plastic operation after the Pouse method was done and the wound closed with the exception of a small opening at the site of the old sinus. The wound was dressed on the fifth day and the wick removed, all subsequent drainage being through the meatus. Recovery was uneventful and in 10 days the child went home. At present the wound is firmly healed and the common tympano-mastoid cavity is granulating rapidly and covering with epithelium. The above case is important on account of the unusual number of complications following the primary operation. Considering the marked reaction which frequently follows tonsillotomy and adenotomy it is a great wonder that complications are not more frequent. This was the first that had occurred in his own experience. In the discussion J. N. Lenker considered the case rather remarkable from the absence of symptoms except for the temperature which varied from 101 to 105 and the very slight chills. J. M. Ingersoll mentioned a similar case in which there was sinus thrombosis with eventual recovery.

(2) Iritis of Dental Origin (exhibition of radiographs), W. E. Bruner. The patient, a lady aged 27, consulted him first in March, 1908, for an inflammation of the right eye of three weeks duration. Her family and personal history were good. Examination showed a patch of episcleritis and scleritis in the affected eye. Aspirin and appropriate local medication were ordered and later sodium salicylate and for a time sodium iodid with only temporary improvement and then more severe exacerbations. On May 1, the scleritis was more marked and in addition she had iritis with numerous posterior synechiæ. Reexamination of her general condition was negative. The teeth were said to be in excellent condition and had recently been treated by her local dentist. On examination, however, a little tenderness was found about the last upper molar on the right side and a small fistula near it. Gold caps had recently been put on a number of teeth. She was sent to a dentist who had a radiograph taken which showed several abscesses at roots of teeth and other roots not properly filled. He removed the cap from the second molar tooth

and found it filled with very fetid pus. She insisted upon returning to her dentist at home for treatment instead of remaining, as desired, in the city. The eye rapidly improved and in 10 days the synechiæ were all but loose, and the scleritis was better. The dentist had established drainage through this second molar and was treating it daily. May 18, the eye became worse and the dentist removed the tooth and found necrosed bone. He removed this and the eye again improved. About June 1, he removed the cap from the first molar and drilled into the root, as a result of which the eye became worse. The antrum at this time was examined with negative result. Grayish patches of infiltration now showed in the cornea. June 17 the eye was again worse and the dentist removed two more molars. June 20 she finally consented to put herself in the care of the desired dentist, who promptly removed all but two of the nine crowns and these two several days later. Thorough drainage was established and treatment instituted. The eye was much inflamed for several days, then improvement set in and continued rapidly and uninterruptedly. In 10 days all inflammation was gone. He then learned that the trouble with the eye began immediately after the dentist had put the crown on the second molar tooth. Evidently the root had not been properly treated or prepared and some pus had been pent in. The eye has since continued to improve. The spots on the cornea becoming smaller and fainter and the patient, at last report, had gained eight pounds in weight. In discussing the paper Edward Lauder considered that we should examine the teeth of our patients ourselves in all cases in which we may suspect a dental origin for the trouble.

(3) Sympathetic Ophthalmia Following Cataract Extraction, Presentation of Specimens, A. R. Baker. Two specimens of eyes enucleated for sympathetic ophthalmia were shown. The specimens were mounted in glycerin jelly by Edward P. Carlton of the Northwestern University Medical School of Chicago, who has also prepared a very complete pathologic report. Microscopic slides were also shown. The one eye presented proliferative iridocyclitis which, according to Fuchs, is supposed to produce sympathetic ophthalmia. In the other eye this condition was not present. The findings were in accordance with the clinical history of the two patients, one being that of true sympathetic ophthalmia and the other an irritative ophthalmia which all disappeared when the injured eye was enucleated.

Book Reviews

A Textbook of Physiology. For Students and Practitioners. By George V. N. Dearborn, A. M. (Harvard), Ph. D., M. D. (Columbia), Professor of Physiology in Tufts College, Medical and Dental Schools, Boston. Octavo, 550 pages, with 300 engravings and 8 colored plates. Cloth, $3.75 net. Lea & Febiger, Publishers, Philadelphia and New York. 1908.

This volume is worthy of notice because it is an original treatise of the subject. It is not a collection of paraphrases and it is evident to any reader that the entire book is the work of one man both in design and execution. The subject matter is arranged and apportioned space as seemed to the author most fitting, not just as others have done. The ground, however, is fully covered and everything seems to come in clear logical sequence. The author states in the preface that the book emphasizes the mechanism of sense organs, nerves and muscles as the basis of the individual's efficiency, and it does. Moreover this is followed by a chapter on Mental Function more complete than has been the custom to include in a textbook of physiology. Some readers will therefore feel that the chapters on Digestion, Absorption and Circulation are condensed out of proper proportion. It does seem unfortunate that the convincing work of Bayliss and Starling on the Mechanism of Pancreatic Secretion and the well known limitations of the various ferments are not emphasized in these chapters, so that the book might be a greater factor in combatting the misuse of digestive ferments in medication. But a lengthening in one place must mean a shortening in another, and each reader misses only what he already knows. There is a whole book of good physiology for all.

The style is clear, concise and pleasing. The author has not marshalled and classified the indisputable, the undisputed and the plausible evidence for and against each theory. He has not argued the matter both ways to be open minded and then reserved decision; but to explain the phenomena under discussion he has given the conclusions which seem to him the best sustained or generally accepted. In this he offends the few advanced workers in the science, but pleases the many looking for the accepted facts to be used as a basis for diagnosis, therapeutics or surgery, and those struggling with the perplexing case before them who accept the decisions of the specialist in physiology as freely as those of the specialist in other branches.

A striking feature of the work is the use of many ingenious picture-diagrams. These drawings—call them cartoons if you will—in addition to the usual tables, charts and curves, certainly help to make complicated processes clear. The details of many phases of digestion, absorption and excretion are accurately described by simple diagrammatic sketches. Even the economic circulation of iron and the contentions of the various schools as to urinary secretion are reduced to picture form and comparative simplicity. To the beginner they help to fix the process and to the reviewer of the subject they save the reading of long paragraphs.

The indexing is very complete, making reference to any function easy, but the work does not seem designed for a reference textbook. It lacks sufficient detail and isolation of topics and as such it will be found wanting by advanced students; yet the simplicity and clearness of the text together with the good laboratory course appended commend it as a teaching textbook. It is easily read and a book to be read through. The author has written out for others physiology as he believes the facts established and the explanations are the arguments with which he has convinced himself and teaches others. It is a simple yet accurate continued story of the wonderful complex process of living told in a very interesting way.

The volume is therefore capable of wide usefulness to students and practitioners who would keep their clinical theory and practise in harmony and apace with the fundamental science of function. Furthermore each reader will surely catch something of the desire to know more of the determined spirit of research which aims to reveal every detail of life, respecting only that vital factor which from matter can make mind.

Anatomy, Descriptive and Surgical. By Henry Gray, F. R. S., late lecturer on Anatomy at St. George's Hospital, London. New American edition, enlarged and thoroughly revised, by J. Chalmers Da Costa, M. D., Professor of Surgery and Clinical Surgery, and Edward Anthony Spitzka, M. D., Professor of Anatomy, in the Jefferson Medical College of Philadelphia. Imperial octavo, 1625 pages, with 1149 large and elaborate engravings. Price, with illustrations in colors, cloth, $6.00 net; leather, $7.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

This new American edition of Gray's Anatomy is indeed well calculated to maintain or even to surpass the standard of excellence set by the numerous preceding editions of this well known work. In the hands of its distinguished editors the book has grown considerably in size containing 1614 pages and 1149 illustrations. This increase in the number of pages is the result in part of the thorough revision to which the book has been subjected and in part to the addition of new illustrations.

To this last point we would like to direct attention, for the representation of any anatomic structure from the hands of a good artist is much more easily grasped and retained than a systematic description of the same, and herein is found the superiority of the present over previous editions. These new illustrations, which are found throughout the work, have been most admirably selected, and the fact that they are taken largely from such excellent sources as the Atlanten of Spalteholz and Toldt in German and the more compendious French treatises of Poirier and Charpy, and Testut, vouches for their accuracy. Furthermore, as is too seldom the case, these reproductions are in all instances quite the equal of the originals. The text also has been considerably amplified, the terms of the new nomenclature (B. N. A.) having been introduced parenthetically and particularly in the sections dealing with neurology and splanchnology is the increase in material and in its detailed exposition most evident. The paragraphs on Surgical Anatomy, Surface Form and kindred subjects have been increased in number and length and add greatly to the value of the book. On the whole the work is by far the best edition of this classical work on Anatomy and those features which distinguish it from its predecessors commend it most favorably to students and practitioners of medicine.

The Cure of Rupture, by Paraffin Injections. By Charles C. Miller, M. D. Comprising a description of a method of treatment destined to occupy an important place as a cure for rupture owing to the extreme simplicity of the technic and its advantages from an economic standpoint. Published by the Author, 70 State St., Chicago. Prepaid, $1.00.

This is a small monograph giving the technic of a cure of hernia by paraffin injections with a report of 10 cases so treated. The author's argument for the use of the method seems to us entirely fallacious as the success of the method, according to his own statement, depends upon the production of a large amount of connective tissue to close the hernial rings and canal. We know from long experience that connective tissue is notoriously weak under strain and will not suffice to effect a permanent cure in most cases of hernia. Ten cases observed for a short time offer no good basis of judgment as to the real success of this method, and we believe it is poor in principle and offers little hope for a radical cure in most cases.

Genito-Urinary Diseases and Syphilis. By Edgar G. Ballenger, M. D., Lecturer on Genito-Urinary Diseases, Syphilis and Urinalysis, Atlanta School of Medicine; Editor Journal-Record of Medicine; Genito-Urinary Surgeon to Presbyterian Hospital, Atlanta, Ga. With 86 illustrations, 276 pages, practical, concise. Price $3.00. E. W. Allen & Co., Publishers, Atlanta, Georgia.

This volume presents in a brief and concise manner the fundamental principles of genito-urinary diseases and syphilis. The author goes into sufficient detail in his treatment of the different subjects to give a clear idea of all the important facts while omitting the minute detail of the larger and more comprehensive works. The volume is brought up to date with many illustrations which serve to elucidate the text and should prove a valuable work particularly for the student and general practitioner.

Medical Gynecology. By S. Wyllis Bandler, M. D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Octavo of 675 pages, with 135 original illustrations. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $5.00 net; Half Morocco, $6.50 net.

The recent appearance of several works on Medical Gynecology is an indication of the swing of the pendulum away from the tendency to regard all gynecologic ailments as necessarily requiring operative procedures. The middle ground is, of course, the correct one, and the author, while emphasizing the importance of non-operative methods in many of these conditions, urges operation in such lesions as ectopic gestation which are generally conceded to require such measures. Operation is advised in all cases of fibromyoma which, when the tumor is not actually causing symptoms, is apt to be regarded by the average practitioner with more or less indifference. Such a stand gives evidence that the book is not of an extreme type but considers the subject free from the bias of a strictly non-operative standpoint. The various methods of examination and treatment are fully given. Under the latter head the use of electricity is evidently not particularly highly considered by the author and not accorded the wonderful value that some enthusiasts would lead us to believe it possesses. Hydrotherapeutic measures and especially the use of the Nauheim bath are strongly endorsed. The chapter on associated nervous conditions and that dealing with constipation deserve special mention.

The greater part of the work considers, first, the various symptoms occurring in gynecologic diseases and their significance, then the various diseases themselves are discussed. This arrangement, the author thinks, is of value in giving different viewpoints and more logical conclusions.

The work should be read by every gynecologist and especially by those who fail to appreciate the fact that after many operations the patient is not entirely recovered and that further measures are often required to effect a complete cure. Too often such cases are lost sight of after the operation only to return months later still suffering. To the general practitioner it should prove of real value, especially if due attention is paid to the cautions that are given in connection with the carrying out of so-called minor operative procedures, which are done in the office and which so often prove disastrous from lack of proper precautions. The work is a decidedly useful one if the reader will realize that it presents but one side of the treatment and that, as the author points out, to try to apply such non-operative treatment to all kinds of gynecologic diseases is a mistake.

A Manual of Diseases of the Nose and Throat. By Cornelius G. Coakley, M. D., Clinical Professor of Laryngology in the University and Bellevue Hospital Medical College, New York. New (4th) edition, 12mo., 604 pages, with 126 engravings and 7 colored plates. Cloth, $2.75 net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

This new edition is very complete, concise and practical. It deals with the author's own way of dealing with the different nose and throat conditions and does not discuss theories or other men's methods. This makes it valuable to the student and general practitioner as there is a minimum of reading necessary to get the author's ideas. It is handy for the specialist as he is able to see what such an authority on the subject does in his own practice.

The section on Spurs and Deflections of the Septum, in the earlier editions, is here considered under Deformities of the Septum, and the technic of operations on the accessory sinuses has been more fully described than in the previous editions.

A very brief outline of the anatomy and physiology is given and tends to recall only the salient points in the subject. The section on Methods of Examination is very good.

The discussion of the different conditions is taken up under the separate headings of etiology, pathology, symptoms, examination, differential diagnosis, prognosis and treatment. This gives a very complete idea of any condition and makes the book valuable for ready reference. The closing chapter on Remedies for the Local Treatment of Nose, Pharynx and Larynx is very helpful, especially in connection with the rest of the book. The illustrations are good and several new ones have been added. These assist materially in the clearer understanding of the text.

Pathogenic Micro-organisms, including Bacteria and Protozoa. A Practical Manual for Students, Physicians and Health Officers. By William H. Park, M. D., Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. New (third) edition, thoroughly revised and much enlarged. Octavo, 648 pages, with 176 illustrations and 5 full-page plates. Cloth, $3.75 net. Lea & Febiger, Philadelphia and New York, 1908.

This book, which has become the standard textbook in a number of teaching laboratories, has been brought up to date in the present edition. The difficulty with all books which are concerned with parasitology of any sort is that they tend so rapidly to get out of date, a contingency which Park is trying hard to avoid. The section on protozoa has been amplified, and is of great value as regards the facts. Unfortunately the proof reading in this section has been very slipshod, and a large number of mistakes in men's names mar the text. It is also to be regretted that the author uses the article before the species name of organisms, as "the spirochæta pallida," etc. These are minor defects and do not seriously interfere with the marked value of the work as a combined textbook of bacteriology and protozoology.

Textbook of Nervous Diseases and Psychiatry for the use of Students and Practitioners of Medicine. By Charles L. Dana, A. M., M. D., LL. D., Professor of Nervous Diseases in Cornell University Medical College; Visiting Physician to Bellevue Hospital; Neurologist to the Montefiore Hospital; Neurologist to the Women's Hospital; Consulting Physician to the Manhattan State Hospital; ex-President of the American Neurological Association; ex-President of the New York Academy of Medicine; Corresponding Member of the Sociètè de Neurologie, etc. Seventh edition. Illustrated by 261 engravings and 3 plates in black and colors. New York, William Wood & Co., 1908.

The idea held by many physicians that neurology has been, in the last few years, an unprogressive science, finds its refutation in this well-known work of Dana. Such a compact statement of neurologic facts now requires a book of 670 pages, to which have been added some 90 pages devoted to diseases of the mind. This latter section is added to meet the needs of students in the many colleges in which the work is used as a textbook.

The book is too well known to require extensive comment as to either the classification or the special diseases of which it treats. It is sufficient to say that it is a standard work, giving a condensed but adequate presentation of the whole range of neurologic phenomena. The engravings and plates, some 260 in number, are a most valuable feature of the work. Not only diagrams but half-tone pictures of patients make the subject a much more concrete one than can be done without their use. Dana has an unusually comprehensive grasp of the subject from the physiologic and anatomic as well as from the clinical side. The work is therefore a most useful one for reference by the busy practician as well as for the medical student.

Medical News

At the last meeting of the Mississippi Valley Medical Association the following officers were elected for the ensuing year: J. A. Witherspoon, Nashville, Tenn., President; Louis Frank, Louisville, Ky., First Vice-president; Albert E. Sterne, Indianapolis, Ind., Second Vice-president; S. C. Stanton, Chicago, Ill., Treasurer, and Henry Enos Tuley, Louisville, Ky., Secretary. The next annual meeting will be held in St. Louis, Mo., October, 1909.

The St. Alexis Hospital Alumni Association met at the Hollenden, Thursday evening, October 1. The program was as follows: Postpartum Hemorrhage, P. S. Smigel; Mammary Carcinoma, with late Metastasis, K. E. Ochs; Report of case of Brain Tumor, W. J. Irwins; Report of case of Psoriasis, R. J. Lawlor.

J. N. McCormack, organizer of the American Medical Association, addressed the students of Western Reserve University and The Cleveland College of Physicians and Surgeons, on the general subject of ''Ethics and the Relations of the Physician and the Public,'' Monday, October 26, 1908, at the Cleveland Medical Library.

The Lakeside Hospital Clinical Society held its thirty-first meeting Wednesday, October 28, 1908. The following clinical cases were shown: A case of Mediastinitis and Thrombosus of the Superior Vena Cava with Compensatory Circulation, J. MacLachlan; Two cases of Hemophilia, L. A. Pomeroy; A case of Congenital Malformation of the Cerebellum, R. H. Bishop; A case of Anterior Poliomyelitis following Lobar Pneumonia, S. C. Hotchkiss; A case of Brain Tumor, C. F. Hoover. Report of a case of Early Carcinoma of Cervix, F. W. Hall; Presentation of Pathologic Specimens, S. L. Haas.

George M. Gould has removed from Philadelphia, Pennsylvania, to Ithaca, New York. Copies of his case-records have been left with Walter L. Pyle, 1913 Chestnut Street, Philadelphia.

The Charity Hospital Medical Society met Wednesday, October 14, 1908. The program was as follows: (1) Obscure Pelvic Tumor, W. H. Humiston. (2) Report of Three Cases of Intestinal Resection, F. E. Smith. (3) The Use of Obstetric Forceps, with demonstration on the Manikin, E. O. Houck.

Army Medical Corps Examinations. The Surgeon General of the Army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1909 will be held on January 11, 1909, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the ''Surgeon General, U. S. Army, Washington, D. C.'' The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of The Adjutant General on or before December 10, 1908. Early attention is therefore enjoined upon all intending applicants. There are at present 57 vacancies in the Medical Corps of the Army.

The State Medical Board has received information that some medical students, having preliminary educational requirements less than demanded by the Ohio law, have been induced to attend medical colleges in other states, under the impression that after graduation they can return to, and obtain a license to practice in Ohio under reciprocity. This should be corrected. All medical students who have or who contemplate matriculating in colleges in other states with such impressions should understand that a license from another state is accepted in place of an examination only. The applicant in all other particulars must comply with the laws of Ohio and the rules of this Board. The preliminary educational attainments must be the same as required of students of Ohio colleges.

The Guy Buttles Case Memorial Wing of Saint Luke's Hospital was dedicated by appropriate ceremonies at the Hospital and at Epworth Memorial Church on Sunday, October 18, 1908. Members of the board of officers and a number of ministers of the city took part. This Memorial Wing was built at a cost of $30,000, as a monument of love to the memory of Dr Guy Buttles Case, at one time a member of the staff of Cleveland General Hospital, from funds left by his mother, Mrs. Jane M. Case. On Tuesday evening, October 20, the first annual dinner of the Hospital took place at the First Methodist Church. An attractive program was provided, speeches being made by various members of the official and visiting medical staff.

Franklin H. Martin, of Chicago, recently spent a few days in this city as the guest of Mr. Charles Nicola. While here he operated upon a case at St. Luke's Hospital.

Two Cleveland Institutions were honored by the International Tuberculosis Congress at Washington. The Anti-Tuberculosis League of Cleveland received a silver medal in competition for the best evidence of effective work in the prevention or relief of tuberculosis by any voluntary association since the last International Congress in 1905. The card setting forth the relation between the Babies' Dispensary and Hospital of Cleveland and the Anti-Tuberculosis League was not in competition, but nevertheless received a special award for honorable mention by the committee.

Public Health and Marine-Hospital Service Examinations. A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street S. E., Washington, D. C., Monday, January 11, 1909, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service. Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. Assistant surgeons receive $1,600, passed assistant surgeons $2,000, and surgeons $2,500 a year. Officers are entitled to furnish quarters for themselves and their families, or, at stations where quarters can not be provided, they receive commutation at the rate of thirty, forty and fifty dollars a month, according to grade. For further information, or for invitation to appear before the board of examiners, address ''Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.''

F. W. Vincent has removed his office from 1110 Euclid Avenue to 13527 Euclid.

The H. K. Cushing Laboratory of Experimental Medicine, of the W. R. U. Medical College, will be dedicated on Friday, November 20, 1908, at 2.30 P. M. Dr William H. Welch, of Johns Hopkins University, will give the address.

H. K. Yaggi, of this city, has removed to Salem, O., where he will take the practice of the late James Anderson.

Deaths

James Anderson, of Salem, O., died October 1, aged 57.

Z. F. Guerin, of Columbus, died September 15, aged 87.

Robt. S. Campbell, of this city, died October 17, aged 25.

L. Schooley, of Belmont, O., died September 17, aged 83.

William C. Hughes, of Cleves, O., died recently, aged 59.

John W. N. Vogt, of Delaware, O., died October 4, aged 56.

Henry F. Kattenhorn, of Cincinnati, died October 3, aged 39.

John H. Rogers, of Springfield, O., died September 28, aged 75.

A. W. Laybourne, of Springfield, O., died October 8, aged 90.

Arthur Kelty, of Youngstown, O., died October 9, aged 72.

Dennis McCarthy, of Dayton, O., died October 17, aged 87.

Elijah F. Davis, of Lakewood, O., died October 18, aged 79.

William C. Underwood, of Dayton, O., died recently, aged 41.

Lark Moon, of Columbus, died October 15, aged 42.

Wm. C. Pardee, of this city, died in Ashtabula, O., September 18, aged 54.

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Traumatic Asphyxia, with Report of a Case

By RICHARD A. BOLT,
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The term traumatic asphyxia suggests a striking clinical picture, but gives little conception of the true pathologic basis underlying the condition. The cases thus far reported are relatively few and of these only several have been so exhaustively studied as to give us exact inner information. There is still a lack of pathologic definiteness in our knowledge of this extremely interesting condition. This is reflected in such terms as "pressure stasis," "Stauungsblutungen," "cervicofacial cutaneous asphyxia," "masque ecchymotique," etc.

The characteristic clinical picture has been admirably portrayed by those who have reported cases. The fact that it sometimes occurs after sudden crushing or compression of the thorax and abdomen for sufficient time to retard, or suspend respiration; that it is followed almost immediately by a marked cyanosis of the face and neck, associated with subconjunctival hemorrhages, superficially resembling asphyxia; that in most cases dyspnea is encountered and the sensoria dulled—all of these phenomena have undoubtedly contributed to the phrase "traumatic asphyxia." But when we come to examine this condition more carefully we find it differs in some important respects from true asphyxia. It bears a resemblance to such states we are accustomed to designate as ecchymosis, extravasation and subcutaneous hemorrhage, but also exhibits graded differences.

It appears from the literature that Ollivier[1] in 1837, and in 1855 Tardieu[2], drew attention to certain peculiar signs of the face and neck associated with some crushing injuries to the thorax and abdomen. They noted postmortem an unusual violet

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Read before the Clinical and Pathological Section of the Academy of Medicine of Cleveland, October 2, 1908 tint of the neck and face, with subconjunctival hemorrhages, in a number of persons crushed to death by crowds, or suffocated in fire panics. The first complete description of this clinical picture, however, has been ascribed to Perthes[3], after whom some have styled it "the symptom-complex of Perthes." He also pointed out the fact that a number of these cases in a few days developed pyrexia, rapid breathing, and bloody sputum, with scattered rales over the lungs. This he termed "contusion pneumonia." While conditions of this sort were recognized at least sixty years before Perthes, he must be given credit of correlating the symptoms, and of consistently reporting his observations.

When Beach and Cobb[4] described their case of traumatic asphyxia in 1904, they presented but six other cases from the literature. It is gratifying to note that later Birge[5] reported one of these rare cases before the Cleveland Academy of Medicine. When Lejars[6] reported his case in 1905 he was able to collect from the literature 27 similar ones. W. Ettinger[7] two years later cited 36 cases of traumatic asphyxia from reports he had collected. Since then several others have been added to the list. The condition is succinctly described by Crile[8] in Keen's Surgery, where an excellent chromolithograph is to be found.

The clinical findings in all these cases have been so uniform —the differences being rather unimportant—that a brief summary is all that will be attempted here: (See summary, pages 656 to 659.)

1. Traumatic asphyxia has usually appeared in young and middle aged individuals of male sex and, as a rule, of healthy and robust constitution.

2. The nature of the injury has been a rather sudden compression or crushing of the thorax and abdomen for sufficient time to retard, or completely suspend, respiration.

3. If unconsciousness ensued it was usually for a brief period. A fair proportion of cases were conscious throughout, suffering only temporary disturbance of sight and hearing.

4. The associated injuries, in most cases, have not proved serious. The head and neck have been remarkably exempt. Fractures of the ribs were somewhat common.

5. The first records of temperature were either normal or showed a slight rise. A few cases have been subnormal. The temperature in one case (9) reached 101° F. The respirations have been variously reported as frequent, short, catchy, rapid,

shallow and labored. Most of the cases have had some dyspnea. The pulse has generally been small and frequent. On the second or third day some cases have exhibited a rise of temperature, frequent breathing and blood in the sputum.

6. The most constant and impressive feature of all the cases has been the uniformity in character and distribution of the color of face, neck and conjunctivæ—the "masque ecchymotique" of French clinicians. The patients all exhibited to a marked degree a violet-blue, bluish-black, or deep blue discoloration of the face and neck—of a finely mottled appearance. The intensity of color appears to have varied somewhat in the different cases. It was also deeper in certain regions of the face and neck, *e. g.*, in some cases reported—more pronounced about the eyes, nose, mouth and ears. In several cases there remained a band of normal skin tint through the colored areas—in one it was noted around the neck where the collar-band compressed the skin, and in our case across the forehead where a stiff hat-band had caused similar compression. In the majority of cases the clavicles formed the lower limit of discoloration. Burrell and Crandon[10] reported a case in which the color extended upward from the level of the third rib, over the neck, face and scalp. In Beach and Cobb's case the face and neck to the inner ends of the clavicles in front were involved, and the double angle of the trapezius muscle was distinctly mapped out behind. In Birge's case the discoloration extended upward from the level of the nipples.

The first impression is that this intense cyanosis is uniformly distributed and homogeneous; but closer inspection reveals a dusky bluish mottled appearance. Rather uniformly distributed over a dusky skin are minute (.5 to 1.0 mm.) areas of normal skin tint, each surrounded by a poorly defined bluish border. These appear, in some cases, associated with numerous minute reddish-violet spots, which led some observers to describe them as ecchymotic spots. Ettinger[7] states that in his case the entire face, eyelids and neck were swollen and of a dark blue color. On the skin of the thorax he noted small and large blue spots. On the mucous membrane of the lips, cheeks, gums and pharynx there were numerous subcutaneous punctiform hemorrhages, and similar ones under the conjunctivæ palpebrarum. Upon pressure the blue color is made slightly paler but does not disappear altogether and it regains its former tint slowly when pressure is removed. In all reported cases there were marked subconjunctival hemorrhages, giving to the scleræ a bright red or scarlet hue. In a number of cases the membrane bulged forward producing noticeable prominence of the eyes.

7. The eyelids in most cases have assumed a darker violet color. There has been moderate exophthalmos in many cases, and marked in a few. The subconjunctival hemorrhages were mentioned in every case. In some the pupils did not react to light. A few cases revealed minute retinal hemorrhages, while in others the vessels were merely congested. Vision was blurred in a fairly large percentage of cases, but no permanent disturbance of sight resulted. The sensoria in most cases were dulled.

8. A microscopic examination of the skin was made by Beach and Cobb, who found a marked distension of the small veins and capillaries, but no blood outside the vessel walls. They reported normal skin. Winslow[11] also found normal skin in his case, with distended, congested capillaries; but no blood outside the vessel walls. In our case we found a number of sections of the skin which were apparently normal, agreeing with former findings; but on studying carefully sections taken from the deeper colored area a few red blood-cells were found outside the vessel walls in the tissue spaces. The venules and capillaries were congested, but there was no injury to the vessel walls themselves.

9. Autopsy findings have been derived mostly from those persons crushed to death in crowds. In 1837 Ollivier[1] examined 23 of the bodies trampled to death in the crowd at the Champs de Mars, Paris. He reported a cyanotic violet discoloration of the face and neck in many of them and also mentioned that the dusky skin was "spotted with blackish ecchymoses." Fracture of the ribs was noted in seven cases. Subconjunctival hemorrhages were found in nine. The pial vessels and brain substance were engorged with blood, but no definite brain lesions were discovered. In other cases of sudden death, showing violet discoloration of the face with subconjunctival hemorrhage, the blood has been fluid and dark, filling all the veins leading to the right auricle. The viscera showed marked congestion, and the vessels and substance of the brain appeared engorged with blood. Punctate hemorrhages were noted into the loose tissues of the scalp, as well as on the surfaces of the pleura and pericardium. From some reports we are forced to believe that true ecchymoses into the skin have occurred. Most of the cases, however, appear

to suffer from a venous stasis with carbonization of the blood but with no real rupture of the capillaries and venules.

Henry[9] reports a case dying 26 days after injury. Autopsy revealed the following: Right lung collapsed; subpleural hemorrhages; several abscesses in right lung (apparently metastatic from an infected wound in the perineum); thrombus in the pulmonary artery; extensive subconjunctival hemorrhages and a few retinal ones; the face showed a typical "masque ecchymotique."

10. Apart from those cases mentioned before as suffering sudden death, there have been but few reported deaths of patients who rallied from the initial shock. Recovery, after the first few days, takes place quite rapidly. The dark violet gradually becomes paler and paler, fading out slowly without going through the color changes of an ordinary bruise or ecchymosis. The blue color begins to fade in two to five days, and in two to four weeks the skin again appears normal, or at most slightly dusky. The subconjunctival hemorrhages, however, remain for a month or longer, and go through the usual chromatic changes. Eventually they clear up completely. The difficult breathing, moderate temperature and slight bloody sputum usually disappear without incident. In our case marked cerebral symptoms developed, a wild delirium, and mania, and the patient died on the twenty-eighth day.

The following case of traumatic asphyxia is reported to the Academy through the courtesy of Dr J. E. Cook, on whose service it occurred at Charity Hospital. Without the cooperation of Drs Hamann, Bruner and Hewitt, this report would have been incomplete:

Mr. J. E., American, aged 38, occupation, street-car inspector, was admitted to Charity Hospital July 20, 1907, complaining of the following symptoms: Difficulty in breathing, fullness about head and neck, bulging of the eyes and dimness of vision, dulness of hearing and difficult vocalization. His family history was unimportant.

Personal history: He had the usual children's diseases with good recoveries from all. Never had scarlet fever, typhoid, pneumonia or tonsillitis. Had diphtheria at 12 years with good recovery. Had attack of nephritis after diphtheria, but no trouble since. Always been in good health since childhood. No history of specific diseases. Always a strong man of even temperament. No headaches. No swelling of neck. Hearing and eyesight always good. Has some catarrhal trouble of the nose and throat. Before accident had no cough or expectoration and no shortness of breath. No heart palpitation. His appetite and digestion have always been excellent. Temperate habits, with the exception of tobacco, which he uses a great deal, especially in smoking. Bowels regular. Urine normal in amount and frequency. His diet has been plain. Uses tea and coffee in moderation. No drug habit. Married and has one healthy child.

History of present trouble: On the morning of July 20, 1907, the patient was caught between two vestibule cars, his lower thorax and upper abdomen being firmly compressed. The head and neck received no trauma. As near as could be determined his body was held for three to five minutes between the cars. While being extricated it was noted that his face and neck were assuming a violet-blue color, and that the eyes were bulging. The stiff inspector's hat, which had been pulled firmly over the forehead at the time of the accident, was taken off in removing him from between the cars. It was then noted that there remained an area of normal colored skin where the hat band had been pulled down over the forehead. Patient stated that breathing was very difficult, and that his eyes seemed to greatly bulge forward. Hearing was dulled and sight temporarily lost (for probably 15 to 20 minutes). Patient was in semiconscious state, realizing what was going on about him, but helpless. While in the ambulance he could dimly distinguish objects and he slowly became fully conscious when he arrived at the hospital 30 minutes later.

Physical examination showed a large plethoric man of strong constitution, weighing about 200 pounds. Patient, fairly comfortable, lay in bed with head and shoulders elevated. There was a moderate degree of dyspnea, with short, catchy breathing. He was perfectly conscious, but sensoria somewhat dull. A little difficulty in hearing and seeing objects clearly. He complained of the light hurting his eyes. Temperature, 99° F. Pulse 100, fair volume and tension. Respiration about 40, shallow and somewhat labored at times. Man complained of pain in left side of chest along the lower ribs about the midaxillary line. Tender on pressure over these ribs, but no definite crepitation elicited. The scrotum and inner aspect of the thighs appeared black and blue, and the scrotum was somewhat swollen. There were several slight contusions and abrasions on the chest. No marks of injury about head or neck. On admission the neck, face and scalp appeared cyanotic and congested. The face, with the exception of the cheeks, was of a deep violet-blue color, the cheeks having more of a reddish-violet tinge. The ears also had a reddish-violet hue. The forehead and scalp were of deep blue discoloration, with the exception of a band about half an inch in width extending across the forehead just below the hairline which was of normal skin color. The neck in front to the upper margin of the clavicles, and behind to the level of the seventh cervical spine, was of a deep mottled cyanotic blue. In fact, the whole cyanotic area of the face and neck, on close inspection, was seen to be mottled. There were minute areas of normal skin color surrounded with violet-blue borders. The lips were of a darker bluish violet hue. The tongue and mucous membranes of the mouth showed moderate cyanosis. The eyelids were swollen and dark blue-black. There were marked subconjunctival hemorrhages throughout the scleral region of both eyes. There was a slight oozing of blood from the nose but no hemorrhage from the ears.

Eye examination by Dr W. E. Bruner: Eyelids of a dark blue-black color, and appear swollen. The bulbi appear prominent, with some exophthalmos. Marked subconjunctival hemorrhages covering the scleræ. Over the entire scleral region the color is bright scarlet-red. The iris appears normal. Pupils react to light and accommodation. The retinal vessels are somewhat congested, but there is no evidence of retinal hemorrhages.

Hearing dull at first, soon became normal. The first urine examination (7-20-07) showed a specific gravity of 1022. Reaction alkaline. Faint precipitate of albumin. No sugar. A large number of fine and coarsely granular, and some hyaline casts. Few leukocytes, squamous epithelial cells, and phosphate crystals. Later (8-14-07) the specific gravity rose to 1040. Reaction became acid, and there was a heavy trace of albumin. A few renal cells, and many hyaline and granular casts were found. No red blood-cells at any time.

On the third day after admission the patient became more cyanotic, developed a cough with bloody sputum, and a rise of temperature. There were numerous bubbling rales of medium and small character scattered over the chest. The temperature fluctuated between 100° and 103° F. The pulse became more rapid and compressible. Three days later the symptoms seemed to have reached their maximum. Bloody sputum was expectorated occasionally after this, and the variations in temperature persisted. The cyanotic hue of the skin began to disappear after the third day, and gradually faded out without going through the ordinary color changes of ecchymosis. In a week the man became very restless and wanted to get out of bed. He also expressed great desire to smoke a cigar. This was finally allowed, and it seemed to quiet him for a while. But he soon became more and more restless, and at night developed a delirium. From the first, oxygen was administered almost continuously, and stimulants as deemed necessary. During the third week the patient became still more delirious—even maniacal at times. He finally became so violent that a restraining sheet had to be used. On August 17, 1907, the patient died.

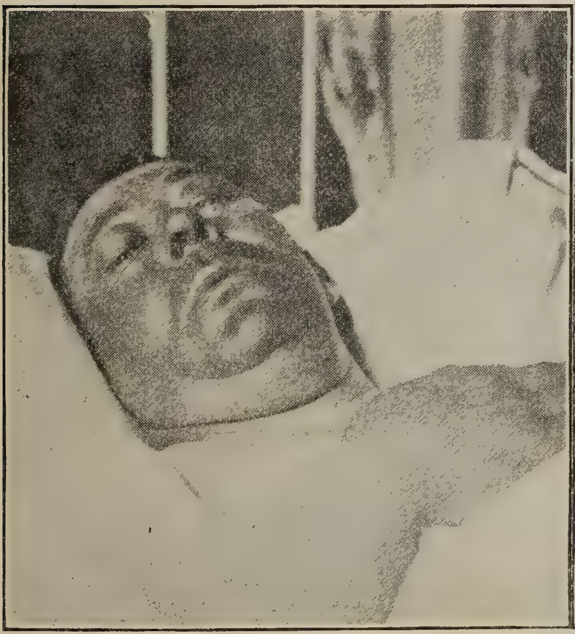
An autopsy was performed by Dr C. A. Hamann, who found no striking lesions, and none which seemed adequately to account for the death of the patient. The findings were as follows: Some recent pleural adhesions; moderate congestion and edema of the lungs; passive congestion in the abdominal viscera, especially of the liver and spleen. The heart was apparently normal. Intracranial pressure was somewhat increased; the pial vessels injected. The brain in other respects appeared normal. Slight duskiness of the face and neck. Effusion of blood under the conjunctivæ just beginning to undergo chromatic change.

Microscopic examination of the meninges and brain revealed a meningo-encephalitis. Microscopic examination of the excised skin taken from the discolored area on the forehead near the band of normal flesh was made by Dr J. Hewitt. He reported that in the first sections examined there did not appear to be any blood outside the vessel walls. On further examination with different staining method he was able to demonstrate effusion of blood into the intercapillary tissues. The number of red blood-cells outside the vessel walls were relatively few. The skin appeared normal with congestion of the venules and capillaries.

After a review of all the cases two questions most naturally arise. (1) What is the mechanism underlying so-called traumatic asphyxia? and (2) What pathologic changes can adequately account for the peculiar discoloration of the neck and face? Various explanations have been advanced, but none completely explain all the phenomena. Heuter[12] concludes, after his experiments upon rabbits, that the marked discoloration of the face and neck is largely due to blood stasis from mechanical causes. This he thinks is brought about by (1) "The sudden upward pressure of blood which dilates the vessels of the face; (2) Pressure on the sympathetic nerves of the abdomen and thorax leads to a paralysis of the vessel walls." The view of Ollivier[1] accords somewhat with that of Heuter. He views the process as due to a stasis of carbonized blood in the dilated and temporarily paralyzed venules and capillaries. Willers[13] throws a little more light on the subject. He also leans largely on the mechanical theory of Heuter but explains the fact that the discoloration is found largely on the neck and face by the lack of competent valves in the jugular and facial veins. He further points out that more cases appear in the young because the skin capillaries are more numerous and elastic in them than in the old. Perthes is of the opinion that the increased intrathoracic pressure due to the severe thoraco-abdominal contusion causes a reflux of blood into the veins of the neck and face. This causes an "effusion" of blood in the head and neighboring tissues, without necessarily any injury to the head itself.

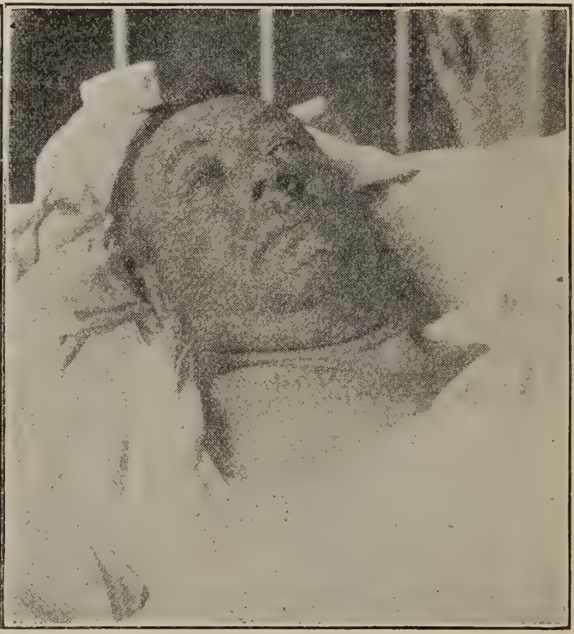
The question now remains whether the peculiar discoloration is due to true subcutaneous hemorrhages—ecchymoses—or to a venous stasis, and dilation of the capillaries. In 1904 Beach and Cobb[4] examined microscopically sections of the skin and also submitted them to Wright. They found in all the sections normal skin, with the venules and capillaries congested, but no red blood-cells outside the vessel walls. In 1905 Winslow[11] also examined sections from his case and found practically the same as did Beach and Cobb. From this they concluded that no real ecchymosis existed, but that the discoloration was due to causes mentioned above. That there is a true subconjunctival hemorrhage and occasional retinal hemorrhage none of the observers deny. In one case (18) a central scotoma was reported. More recently another factor in the mechanism of traumatic asphyxia has been pointed out by Lejars[6]. He states that the mechanism is not altogether passive, but that there is an active "effort" on the part of the patient during the accident. In an attempt to defend themselves from the danger the patients seem to exert a thoraco-abdominal effort, accompanied by deep inspiration and closure of the glottis. This effort must produce a powerful intra-abdominal and thoracic pressure. Tardieu[2] in 1866 seems to have recognized this factor, for in discussing the death of nine persons crushed in the panic on the bridge de la Concorde at Paris, August 15, 1866, he notes that "the punctiform ecchymoses of the face, neck and chest are caused by the effort, in which resistance to suffocation manifested itself." Similar cases of discoloration of certain parts of the face and neck have been reported in patients suffering from paroxysms of bronchial asthma, whooping-cough, violent vomiting, and severe strains. These may well be considered incomplete forms of the condition which we have under consideration.

It is fair to conclude that so-called traumatic asphyxia is only the most typical clinical picture of a pathologic condition which exhibits varying degrees of intensity. The mild and incomplete forms approach closely true asphyxia with cyanosis. Powerful thoraco-abdominal effort on the part of the patient may be sufficient to produce the incomplete form, but to cause a traumatic asphyxia there must be a severe and sudden compression of abdomen and thorax for a sufficient period to suspend respiration, and at the same time force the carbonized blood largely into the veins and capillaries of the cervico-facial region. This is favored by the lack of competent valves in the veins leading from the head, and the protection which the well formed valves give to the trunk and extremities. The sudden reflux of blood causes a dilatation of the venules and capillaries. Pressure on the abdominal and thoracic sympathetic plexuses may add to the effect of dilatation and cause a temporary paralysis of the vessel walls. A condition of venous stasis is thus favored which gives rise to the peculiar discoloration. In most cases no injury has been caused to the vessel walls, and the blood has been confined to the vessels. But from authentic reports we must conclude that the condition may become so severe as to cause a diapedesis, or even extravasation, of the blood in certain regions of the face and neck.



I.

Photo taken the day after the accident. The band of normal skin around the forehead is shown.



II.

Photo taken three days after the accident. The intense discoloration and mottling cannot well be shown in a half tone.

PHOTO BY W. H. LEHMAN OF THE EDMONDSON COMPANY.

Analysis of 15 of

Cases.	Age and Constitution.	Trauma.	Other Injuries.	T. P. R.
1 Vogt, 1871 .... (Quoted by Braun.)	15	Wagon wheel ran over abdomen. Apparently unconscious.	Contusion of abdominal wall. No head injury.	....
2 Hueter, 1873.....	14	Abdominal injury from flail of threshing machine. Not conscious.	Penetrating wound of abdominal wall. Intestines protruded.	....
3 Braun, 1878....	20 Presumably robust.	Chest and abdomen crushed for one-half hour by falling masonry. Conscious throughout.	None found.	Normal.
4 Perthes, 1898.	14 Very small boy; poorly nourished.	Thorax and left shoulder crushed between bench and machine carriage. Unconscious at first for short time.	Fracture left clavicle outer and mid-thirds and 3 and 4 ribs in left mid-axilla. Tender, and crepitant over them.	T. 37.3 to 38.3 C. P. 86-96. R. Catchy, shallow.
5 Perthes, 1898.	36 Strong.	Ant.-post. compression of thorax between wagon and post. Fully conscious.	Fracture of left radius, crushing skin and muscles.	T. 38.9 on third day. P. Small, rapid. R. Shallow, rapid.
6 Burrell and Crandon 1902.	22 Large, muscular, well developed.	Ant.-post. compression of chest in standing position between electric car and post. Entirely unconscious for four hours.	Fractured ribs—left lower, 7, 8, 9. Slight bleeding from both ears and nostrils. No wounds on head evident.	P. 100 weak. R. Shallow.
7 Beach and Cobb, 1904.	30 Large muscular, well developed. Perfect health.	Severe crush, groin to mid-thorax, caught and held three minutes by moving elevator Unconscious for few minutes. Conscious one hour later.	Several contusions over abdomen. In left groin and back fluctuating hematoma. Left 8, 9 ribs fractured.	T. 99.5 F. R. Labored.
8 Winslow, 1905.	22 Apparently robust.	Crushed in bent-over position: held some moments between top of elevator and ceiling. Conscious.	Laceration about rectum. Fractures of left 4, 5, 6 ribs in mid-ax line. Contusion right ear.	T. 98.2 F. P. 120. R. 40.
9 Birge, 1905.	36 Large, muscular man.	Abdomen crushed at lower dorsal region between load of steel rods and sharp edge of platform. Unconscious for few minutes. Soon recovered, but dull and sluggish.	Dislocation forward of first lumbar on last dorsal vertebra with motor and sensory paralysis below. Above that point a number of burns over back. No evidence of injury above.	P. 90. R. 30.
10 Robertson, 1905.	3	Chest tightly wedged between cow-catcher and ground. Unconscious.	Cut on forehead. Abrasion on right of chest in ant. axil. line from 3rd rib downward for 6 inches. Abrasion on back. Bruise on left thigh.	T. 98 F. P. 122. R. 40.
11 Henry, 1907.	20 Apparently robust.	Chest crushed by two heavy iron pillars. Unconscious for brief period.	Punctured wound of perineum with lacerated edges. Tenderness in both groins. No fractures. Abrasions over face.	T. 101 F. P. 98. R. 24.

the Reported Cases

Condition of Eyes.	Area of Discoloration, and Nature.	Outcome.
Conjunctivae contained blood.	Face blue upward to hair; lower boundry, line with thyroid cartilage. Small "extravasations" of blood under skin.	Recovery. Discoloration gone in three weeks.
Subconjunctival hemorrhage.	Whole face dark blue to hair line. Below to line of thyroid cartilage. "Petechiae" size of pin-head to slightly larger; with irregular notched edges. Marked epistaxis.	Recovery in four weeks. After 24 hours deep blue began to fade, and in three days had arterial hyperemia.
Bloody extravasation of cornea, Both pupils dilated, no reaction to light, Retina normal; no extravasation.	Face swollen, dark blue, especially left side. Very many "ecchymoses," pin-head to pea size on face, neck and left upper forearm.	Recovery. Discharged on fourth day. Face still somewhat blue and subconjunct. hemorrhages. Well several months later.
Conjunctivae completely suffused with blood. Sclera blue-red. Slight exophthalmos. Pupils reacted.	Face blue, lower half right cheek paler. Dark color did not disappear on pressure. Countless dark-red "petechiae." Similar "petechiae" upper half left side neck. Lids both eyes very deeply colored bluish-red. Face and head swollen.	Recovery. In four days blue partly gone. Subconjunct. hemorrhages remained six weeks.
Both sclerae red with blood, also palpebrae. Vision undisturbed.	Whole face swollen, especially in temporal region. Bluish-red color, especially in lower eyelids. Upper part of neck several small bluish-red spots, not diminishing appreciably on pressure.	Recovery. On 13th day still few traces of subconjunct. hemorrhages.
Subconjunctival hemorrhage in exposed, but not in covered sclerae. Pupils small, equal, no reaction to light. Excessive chemosis. Minute retinal hemorrhage. Vision slightly blurred.	From level of third ribs upward over neck, face into scalp dusky, bluish, mottled appearance. Slightly paler when pressed. Uniformly over dusky skin are minute (.5-I. mm.) areas of natural skin tint each surrounded by bluish borders uniting in a meshwork. Edges of lips and mucous membranes of mouth slight degree.	Recovery. On fifth day blue began to fade. In 11 days skin normal. Discharged in three weeks.
Bulging of conjunctivae with extensive hemorrhage. Pupils equal, react to light. No retinal hemorrhages.	Face and neck to inner ends of clavicles in front. Double angle of trapezius marked out clearly behind. Dotted with countless spots from black, reddish-blue to blue, between which areas normal looking skin.	Recovery. Discoloration disappeared rapidly after third day. Almost normal in three weeks. Miscroscopically skin normal. No signs of blood outside vessels in tissues. Vessels congested.
Extensive conjunctival extravasation. Pupils equal, respond to light. No retinal examination.	Head, face and neck to level of cricoid cartilage swollen, and punctiform bluish cyanosis of skin.	Recovery. In 12 days slight discoloration of skin. Microscopically capillaries distended. No blood outside. Normal skin.
Considerable subconjunctival hemorrhage. Some exophthalmos. Iris normal surrounded by bulging very red sclera. Vision undisturbed.	From level of nipples upward over neck and face into scalp the skin presented a dusky, bluish, mottled appearance. Color slightly paler when skin was pressed. When pressure removed, slowly regained former tint. Uniformly distributed all over dusky skin minute (.5-I. mm.) areas of natural skin tint, each surrounded by a poorly defined bluish border and on edge of lips and mucous memb. Sl. degree over both arms and hands.	Recovery. At first had slight flow of blood from nose and mouth. Slight bloody expectoration for a few days. Condition of skin persisted three days, and then gradually disappeared. Eyes looked normal in two months.
Lozenge-shaped hemorrhage of each conjunctiva from edge of iris to angle of eye. Few red-brown spots inner side of eyelids. Pupils normal. No retinal hemorrhages. Vision unaffected.	Intense blue-black color face and neck. Distinct line demarcation around neck at level of middle clavicles, below which skin was absolutely normal. Color rather less over ears. Faded where forehead met hair, and hairy scalp merely congested. Color not homogeneous; uniform blue tint with great many minute reddish-brown spots shining through. Spots most evident at margins where blue tint faded.	Recovery uneventful. By second day intensity of color markedly diminished. After third day color faded steadily, but much less rapidly. No chromatic changes of blood extravasation. Simply faded out. Discharged on 11th day, somewhat swarthy. Subconjunctival hemorrhages not changed.
Extensive subconjunctival hemorrhages of both eyes. Few small retinal hemorrhages	Face, neck, upper portion of thorax in front markedly cyanotic. Free bleeding from both ears. Skin of face and thorax dusky hue, and abraded in places.	Death. Autopsy showed right lung collapsed. Internal hemorrhages. Several abscesses in right lung. Thrombus in pulm. art.

	Cases.	Age and Constitution.	Trauma.	Other Injuries.	T. P. R
12	Roset, 1906.	5 Apparently healthy.	Head struck and trunk compressed by wire netting, filled with stones. Unconscious for some time.	Erosions on breast. No other wounds or fractures.	T. Sub-normal. P. Small, frequent. R. Normal.
13	Ettinger, 1907.	18 Body structure normal. Nutrition fair.	Thorax and abdomen trampled upon in a panic. Unconscious one hour.	Blood in left ear. Outer end of right clavicle torn from acromial process. Other minor injuries.	T. 37.4 to 39.4 C. P. 100.
14	Ryerson, 1907.	5 Fairly well developed and nourished boy.	Abdomen and thorax crushed between spring and wheel of lorry; forehead bruised. Unconscious. Recovered during day but quite apathetic and dull.	Abrasions and contusions behind right ear, on forehead, down outer side of left leg and thigh, on right side abdomen above iliac crest, inner side right thigh below perineum and left side lower jaw. No fractures.	T. 99. P. 120. R. 30. Shallow.
15	Beatson, 1907.	24	Shoulders driven down into abdomen, crushed by pit cage.	No fractures. A large sublingual hematoma.	....

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Condition of Eyes.	**Area of Discoloration, and Nature.**	**Outcome.**
Eyelids swollen; eyes protruding; conjunctivae dark red.	Face reddish violet color, which on first view seemed to be uniform. Further examination showed it to be darker around mouth, ears and nose. Mucous membranes of swollen lips were violet. Neck appeared dark reddish, not so intense as on face. Discoloration ended at the circular line of the neck of the shirt.	Recovery. After two days general condition improved. “Ecchymosis” disappeared from face after 10 or 12 days. Subconjunctival hemorrhages lasted several weeks longer.
Conjunctivae bulbi represent two large hemorrhages. No retinal hemorrhages. Sees well; vision unaffected.	Entire face, eyelids, neck swollen and dark blue color. On skin of thorax small and large blue spots. On face, neck, mucous membranes of lips, cheeks, gums and pharynx subcutaneous punctiform hemorrhages.	Recovery. Edema and cyanosis of face and neck began to diminish on third day. Punctiform hemorrhages disappeared on eighth. On 12th day cyanosis of skin had entirely disappeared. Subconjunctival hemorrhages remained over a month.
Eylids blue and swollen. Conjunctivae raised and project over cornea; hemorrhagic effusion beneath. Photophobia.	Face and neck deep blue, mottled appearance, shades off and disappears over upper part thorax, ant. and post. Pallor of face due to shock can be seen through blue discoloration. Dark spots are small, circular and dark blue. Not influenced by pressure, and separated from one another by narrow bands of normal skin. Around the neck at the level of the collar is a circular band about half inch wide, quite white and free from blue discoloration. Eyelids blue and swollen.	Recovery. Blue color began to fade on the second day. Gradually disappeared. Subconjunctival hemorrhages remained some time. Left hospital in 24 days, in good general condition.
Subconjunctival hemorrhages. Some proptosis.	Intense congestion of head and neck, almost petechial in character, but not affected by pressure. Considerable edema around eyes and mouth. Discoloration around eyes and nose as in ecchymosis.	Recovery. In three days congestion and discoloration began to fade and by the eighth day was present only on the forehead, and this now yielded to pressure.

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A Clinical Report Based upon a Consideration of 42 Consecutive Abdominal Hysterectomies for Uterine Fibroids

By F. E. BUNTS, M. D., Cleveland

Since March 3, 1902, I have performed hysterectomy for uterine fibroids 42 consecutive times, with one death. This death occurred in a patient nearly moribund from complete intestinal obstruction due to pressure. She had had fecal vomiting for over 12 hours previous to the operation. These cases were all operated upon by the supravaginal amputation method. Previous to that time I had had two deaths following panhysterectomies, both of which, however, were complicated, one with a very large ovarian cyst, the other being an extremely large fibroid with adhesions. It has seemed to me that the supravaginal amputation offers several points of advantage over total extirpation in that the operation can be done more speedily except in a few individual cases; it gives a better support to the pelvic contents and above all it lessens the danger of injury to the ureter. In none of these cases was an injury inflicted upon the ureter or was there any difficulty experienced in avoiding it; that the danger of injury to the ureter is not such a remote one may be gathered from Bland Sutton's quotation from Sampson to the effect that among 156 panhysterectomies performed at the Johns Hopkins Hospital the ureter was injured in no less than 19 cases, a little over 12%. The suggestion of Kelly that the ureters should be catheterized before operating would seem a good one when panhysterectomy was to be performed, but it must be acknowledged that the catheterization of the ureters as a routine performance is, except in the hands of an expert, a somewhat difficult and often tedious performance, and we cannot believe that it is so entirely devoid of danger or secondary consequences as to make it desirable as a routine. It must be remembered, too, that many of these cases have been greatly weakened by prolonged or repeated hemorrhages, that the hemoglobin is greatly reduced and that prolonged anesthesia still further lowers the hemoglobin percentage and adds to the shock attendant upon the operation. In none of my cases did I perform myomectomy. This operation I have done on previous cases, but have practically abandoned it. My reasons for abandoning it are as follows: (1) it leaves dead spaces often difficult to fill accurately, and while modern methods

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Read before the Clinical and Pathological Section of the Cleveland Academy of Medicine, November 6, 1908 of asepsis have greatly lessened the fear of the supervention of sepsis, these dead spaces may be partly filled with blood-clots which at least offer an inviting field for bacterial growth; (2) I remember a case of fibroid of the uterus many years ago in which a simple puncture was made with a knife, supposing it to be an ovarian cyst. The small puncture was sutured but the patient died suddenly the next day with a cerebral embolism. In other words there is an element of danger in cutting into the enlarged veins covering many fibroids; (3) it is almost impossible to remove all the fibroids in this manner; many are so small as to be inevitably overlooked and so far as I can judge stand just the same chance of growing as the ones removed by myomectomy; (4) the hemorrhage for which the operation is so often performed may be caused by small submucous fibroids which would escape observation and thus nullify the object of the operation; (5) it gives more raw places for possible adhesions; (6) the chances of pregnancy occurring (1 in 10) subsequent to myomectomy are too few to make it desirable to take the additional risks, except when an urgent desire for offspring on the part of the woman, and an exceptionally favorable case, make it, perhaps, permissible to resort to myomectomy; (7) and more important than any other reason is that notwithstanding the apparent simplicity of this operation the statistics of Johns Hopkins Hospital show that the percentage of deaths from hysterectomies is less than that from myomectomies, 3.5% for the former, 4.5% for the latter, and the statistics of Winter show a still greater difference in favor of hysterectomy, 4.8% as compared with 9.8% in cases of abdominal myomectomies.

As to the technic of the operation, it seems to me to be of importance to sterilize the vagina by the ordinary methods used in preparing for a vaginal operation and to sterilize the cervix, but I have not thought it desirable or best to resort to preliminary curettment of the uterus or cervix.

In cases with a very low hemoglobin percentage, below 40 or 30%, no special contraindication to operation exists, the only indication being for increased speed in the operation, and in all operations the simplest and most expeditious method is to be selected. This I believe to be delivery of the tumor, clamping and severing both broad ligaments, still further delivery of the tumor, clamping of both uterine arteries, incision and stripping down of the anterior layer of peritoneum with the bladder, amputation of the neck, ligation of the clamped tissues and suturing of the cervical stump in three layers, the first two in the uterine tissue itself, the third to bring the anterior and posterior peritoneal surfaces smoothly in contact and covering over, where possible, the stumps of the pedicles. Chromicized 20 day catgut Nos. 2 and 1 are the only suture and ligature materials used, and I have thus far never experienced any slipping or giving way of the ligature or subsequent hemorrhage. The question often arises as to whether or not to remove the tubes and ovaries. In women who have not yet passed the menopause I make it my invariable rule to leave them if not obviously diseased or so placed as to make their retention impracticable. And even in the most difficult cases it seems to me best to leave at least a portion of one or both ovaries behind.

Some few operators, I believe, make it a rule always to remove the appendix at this operation. My own practise is to remove it if obviously diseased or adherent to any of the pelvic structures, but not otherwise unless I have been previously requested to do so by the patient. It is true, the additional risk is almost nil, but it is not an operation of necessity and, therefore, no additional risk or delay should be added to that already incurred, without the sanction or wish of the patient, whatever our own ideas of its ultimate value or consequence might be.

In none of my cases have I had occasion to use vaginal drainage. Careful hemostasis is most essential, for even small bloodclots may become infected and cause a fatal outcome.

Vaginal drainage adds a possible element of danger from infection that should be avoided whenever possible, and inasmuch as arrest of hemorrhage rather than drainage would be the indication in cases of persistent oozing from the deep structures of the pelvis, moderate packing of gauze coming up through a small opening at the lower angle of the initial incision would best subserve our purpose. This can be removed about the second day without interfering especially with the repair of the wound. In none of my cases did I have occasion to drain by either method.

The leaving of normal saline in the abdominal cavity has been resorted to by some with a view to replace by absorption the loss caused by hemorrhage, either previous to or during the operation, I have not followed this practise, preferring to leave the pelvis perfectly dry and to use hot saline solution in the rectum or subcutaneous infusions in serious cases.

At least two cases suffered subsequently from thrombosis of veins of the lower extremities, prolonging the period of convalescence for several weeks. I shall not attempt to explain these cases of thrombosis, about which such a variety of opinions obtain, except to state emphatically that I do not believe them to be invariably an evidence of infection, and to suggest that a recent explanation ascribing the phenomena to the excess of calcium salts in the blood-serum and in the juices of the body may have some bearing upon a not infrequent but very unpleasant complication of any abdominal operation.

It is extremely difficult to estimate the rapidity of growth of uterine fibroids. The statement of the patient can rarely be given much weight. I have known them to assert with apparent conviction that a large fibroid had been of but a few months duration, and in others a considerable sized growth had developed without attracting the attention of the patient. It has seemed to me that they developed most rapidly in the young and in child-bearing women. Thus in one patient, aged 28, it developed in six months from what her physician described as a tumor the size of a hen's egg to a large growth reaching well up to the umbilicus. And in another, aged 22 years, the tumor was so large as to resemble a seven months' pregnancy. Their rapid growth in pregnancy and subsequent diminution in size after delivery is a familiar phenomenon; and the question of operative interference in these cases has been a mooted one. In two of my series of cases I have been obliged to do a hysterectomy upon a pregnant myomatous uterus, once for persistent hemorrhage, and once for rapid enlargement, severe pain, and distressing pressure symptoms. The latter case was one in which at operation the uterus was found to contain a large number of growths varying in size from a hickorynut to an orange.

Of these 42 cases, 35 were married, 7 single; the youngest unmarried patient operated upon was 22 years, the oldest 63 years; the youngest married was 28, the oldest 64; the average of all was 43.

Of the 35 married women, my records show that 16 had borne children, the greatest number born to any one woman being 9, to another 7, to another 6, thus showing that the presence of a fibroid of the uterus is *per se* not incompatible with more than average fecundity. The total number of children born to these 16 women was 55, or an average of more than three children to each woman. The question of miscarriage is an uncertain one, only three cases being recorded in these histories; for obvious reasons the accuracy of a patient's statements in this connection are apt to be misleading and uncertain.

The question of malignant changes occurring secondarily to the development of a fibroid is of interest, particularly from a prognostic standpoint, and I have records of two cases, not operated upon, not included in this series, in which malignancy developed in one 15 years, and in the other five years after I had first seen the cases. Both were large fibroids, that is, extending above the pelvic brim when first seen, and an operation was advised and declined in both cases.

In none of this series was a sarcomatous change demonstrated, but in one, that of a patient aged 64, there was a carcinoma of the fundus, entirely separate and distinct from the fibroid growths.

Drugs in Cardiac Therapy

By J. B. McGEE, M. D., Cleveland

The drug treatment of cardiac weakness is generally reserved until rest and hygienic measures have been considered, as with the first evidence of failing compensation rest is regarded as an essential; with this condition existing, however, either from valvular defect or a weak myocardium, or perhaps both combined, the use of the remedies recognized as improving cardiac tone is indicated. Organic heart disease generally continues for an indefinite period and yet, with the aid of these agents, we may relieve the deranged circulatory conditions and give years of comparative comfort. Cardiac incompetency in a general way comprises cases of valvular lesion with insufficiency, and those of myocardial weakness, when valvular disease does not coexist. The condition of the cardiac muscle, however, is really of greater importance than any valvular lesion which may be present and when the heart shows evidence of failing, the indications appear to be to lessen its labor, to increase its power, and to improve its nutritive supply.

The value of the circulatory stimulants in these conditions of disordered heart action and lack of vascular tone is certainly decided, and of the agents upon which we are accustomed to rely in cardiac insufficiency and its results, digitalis still retains the first place and is frequently almost indispensable. We are familiar with the indications for its use, especially in lowered tension

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Read at the October Meeting of the Lake County Medical Society and edema, and know it is but rarely required when compensation is complete; when this is lost, however, digitalis is our main reliance, in whatever form may be chosen, and only when it fails or disagrees do we as a rule seek a substitute. We know that it increases tension and that it is a mistake to give it when the vascular tension is already high. Either extreme of tension in the vessels imposes extra work upon the heart and the effort should be to bring it near the normal in tone, with digitalis if this be too low, or by the vasodilators as the nitrites should it be too high. In fact the vascular as well as the cardiac condition should always be considered. The administration of digitalis is to some extent influenced by the character of the lesion present. There is quite a difference of opinion as to the advisability of its use in aortic lesions, but it is generally asserted that in these cases with failing compensation the pulse under its influence should be held at 80 or above, while in mitral disease its reduction to normal or even below is often followed by the best results. In fact in aortic cases strophanthus or spartein might be preferable, as neither contracts the vessels, while if digitalis be chosen, its union with a vasodilator is desirable. As to the choice of preparation the general preference of the profession for the infusion, when dropsy is present, is borne out by the pharmacologic investigation of the drug. A fresh infusion from the leaves is, however, necessary, since a dilution of the fluid extract or tincture is an essentially different preparation. The tincture is usually preferred for its cardiac action, the principles exerting a tonic action on the heart being most soluble in alcohol. Of its active principles digitalin probably most nearly represents the action of the drug itself in improving cardiac and vascular tone. I have used it with satisfaction and have come to look upon it as a reliable remedy, seldom giving over 1-60 to 1-30 of a grain, although doses of as high as 1-10 of a grain or even more of Merck's amorphous digitalin have been recommended. As to digitoxin, my use of it has been largely limited to the soluble form known on the market as digalen and my experience is greatly in its favor. I have used it for some time and in a number of cases associated with extensive dropsy have found it of the greatest benefit when the usual remedies failed, and it has seemed to me to do best in those cases without nephritic involvement, cases of primary cardiac disease. Digatalone, a solution of the active principles, is also an efficient preparation and not apt to disagree. Concerning the dosage of the drug the therapeutic result, independent of the amount given, is the best index, and one is justified in an extreme case in carrying the dose much beyond that usually recommended. In the administration of the drug, bearing in mind its possible cumulative effects, moderate doses at fairly long intervals, and occasionally intermitting its use for a few days, render it a safe remedy in chronic cases for an indefinite time. High arterial tension and myocardial degeneration contraindicate its use and a pulse suddenly dropping below the normal or a diminution in the amount of urine justify its withdrawal. In addition to sometimes disturbing the digestive organs, the drug may occasionally produce mental symptoms as delirium.

Although digitalis usually proves all we may desire, it may disagree with the patient, or disappoint us, and of the drugs resembling it in action strophanthus is commonly conceded to stand next in therapeutic worth. The class of cases in which strophanthus is of value is practically that in which digitalis excels. Its range of application is quite similar, but its greater rapidity of action, less tendency to cumulative effect and absence of appreciable action on the vessels, render it in some cases preferable to digitalis, notably in the presence of high tension and in the aged. The tincture is the preferred form employed, but the active principle strophanthin has the advantage of ready solubility when the hypodermic method is chosen. Standardized preparations of both strophanthus and digitalis would seem to be the most desirable liquid forms for administration. Spartein sulphate rather resembles strophanthus in the fact that while it strengthens the heart, it does not contract the vessels; its promptness of action is also an advantage and personally I consider it one of the best of the heart tonics and use it freely. The official dose is quite small, one-half to one grain is as a rule not too large, and it can be given frequently and with safety. Like strophanthus it is better as an emergency remedy than digitalis, the slowness of absorption of which, when given orally, indicates its subcutaneous use when rapidity of action is required. Concerning cactus, opinions appear to vary greatly, some pharmacologists pronouncing it practically worthless, while many clinicians recommend it highly. Some standard therapeutic works fail to even mention it while others ascribe to it decided virtues. The clinical testimony is rather in its favor in the functional and neurotic conditions and in the weakness of myocardial change rather than in the valvular lesions. Cactin is asserted to be a mixture of principles and to represent its virtues, but personally I have never employed it.

Strychnin is one of our most generally used and most trustworthy cardiac tonics. It is, however, rather an emergency than a routine remedy and should then be used in good sized doses and subcutaneously. In chronic cardiac disease it is often an efficient supplement to, or substitute for digitalis. In cardiac asthenia it is perhaps our best agent and can be used in moderate doses safely for an indefinite period. In the weak heart following acute disease, especially influenza, it is probably the remedy generally preferred, and has here the advantage of its general tonic action as well. It is a question, however, whether we are perhaps not inclined to use it too freely in acute affections as in lobar pneumonia and typhoid, when better results might follow by holding it in reserve until special indications arise. In the failing heart of acute infections the diffusible stimulants, especially alcoholic, are generally recognized as of great temporary aid, and with strychnin form the usual line of treatment. Strychnin seems to be an agent of which, like nitroglycerin, when given for a time the system becomes tolerant and an increase of dose seems required for continued effect. As in acute disease so in chronic heart involvement strychnin is more liable to be abused than some other remedies.

Adrenalin is an agent typical of the various suprarenal principles under different names and is of value in cases of cardiac depression with vasomotor relaxation. It is also a peripheral vasomotor stimulant, but its action is rather evanescent, requiring frequent repetition for continued effect. When given orally it has but little effect as a circulatory stimulant and when used subcutaneously should be well diluted with saline solution to avoid local vasoconstriction. It is an emergency remedy in cardiac cases and its continued use might give rise to arterial degeneration or glycosuria. Some assert that the intravenous method alone is suited for its administration but its subcutaneous use will often be of aid and when given orally I have found it relieve, in several cases, the tachycardia and other symptoms of exophthalmic goiter.

We are aware that we can aid a weak heart in two ways, either by increasing its power or lessening its work. The cardiac tonics generally fill the first indication, while the second is accomplished by the use of the vasodilators, through relief of peripheral resistance. Of these the nitrites and nitroglycerin are commonly used and erythrol tetranitrate, the effect of which is of longer duration is also somewhat employed. The action of these drugs as heart stimulants is rather indirect in character, as it is in the power of relaxing tension that their value largely lies, rather than in any action of a stimulant character on the heart itself. It is a question too whether the simple presence of hypertension in itself calls for treatment, as it is doubtless to some extent a compensatory effort, and only when excessive and in itself a danger or when it imposes too great work upon the heart does it call for interference or control. We are too apt, perhaps, to think of stimulation in a weak heart, while lessening its work by dilating the vessels will often afford greater relief. The effects of these agents can only be exerted, however, while the muscular fibers of the arteries still retain to some extent their elasticity, as in vascular spasm, and these drugs can exert but little influence on that high tension which is dependent upon fibroid changes. The use of nitroglycerin in certain cases of pneumonia without regard to the vessels is open to criticism. The condition of collapse often met with in such cases is due rather to the vasomotor depression from the toxins of the disease than to direct cardiac failure; the use of this agent then would rather increase the already lowered vascular tension present and so do harm. This condition would be better met by such vasomotor stimulants as atropin or strychnin. When used, the nitrites or nitroglycerin should be given frequently because of their evanescent effect. Their beneficial result is shown not only in the lowering of the blood-pressure but also by the general feelings of the patient. They find their most frequent use when given alone or combined with digitalis in the failure of compensation secondary to chronic nephritis.

While we are accustomed to depend mainly upon the nitrite group as vasodilators, it is now known that the xanthin derivatives, as caffein, theobromin and their compounds, not only stimulate the heart but also secondarily dilate the vessels, theobromin being the more active of the two in this respect. They may be used alone or in combination with digitalis with gratifying results in insufficiency and dropsy. Caffein is generally well borne and its direct diuretic action enhances its value. The presence of any cerebral involvement would contraindicate its use and it has a tendency to produce insomnia and restlessness in some patients. The so-called citrate of caffein is the form of choice because of its solubility. Theobromin is insoluble and diuretin, a soluble compound with salicylate of sodium has the preference. Agurin and other recent derivatives of the drug resemble it in action. I have found diuretin prove of great merit, when the usual line of treatment failed, in several cases of chronic parenchymatous nephritis with dropsy, producing free diuresis with relief of the dropsy and dyspnea. The dilation of the vessels under caffein follows an initial rise of pressure while theobromin seems to lessen tension from the very outset of its action.

The use of opium in heart affections deserves notice. During the severe paroxysms of dyspnea associated with valvular involvement, and in the distress of cardiac asthma, the use of morphin in small doses subcutaneously generally gives relief, quieting the nervous condition and relaxing the spasm. Here too the nitrite group find a special indication, relieving the constriction of the vessels. It is probable that as a routine remedy for dyspnea, from whatever cause it may arise, no other agent excels nitroglycerin or its allies the nitrites. Codein too acts well here and Babcock has called attention to the satisfactory action of heroin in these cases, sometimes succeeding when morphin has failed. In the condition of myocardial weakness of a chronic character opium or its derivatives, in small doses at regular intervals, seem to have a sustaining influence of a tonic character on the heart. In insufficiency with dropsy I have found it to relieve the distress and restlessness even when given orally. I have seen only benefit follow its use when carefully given and feel no apprehension concerning it unless nephritis coexists, when, if given, it should be carefully watched.

There is a native plant, the apocynum cannabinum or black Indian hemp, which has long been recognized as of great aid in cases of cardiac dropsy when a good preparation is employed. I am quite familiar with it, having used it for years, and believe it a remedy always to be considered in the treatment of this class of cases, should our ordinary agents fail to give relief. Large doses are extremely apt to disagree and I believe the dose of the fluid extract 15 minims, as usually stated, to be quite too large for general use, five minims or even less generally being sufficient for its cardiac and diuretic effect. Its intense bitterness is an objection, and to obviate its nauseant action it is best given in a small dose and with some aromatic or carminative. Its diuretic effect is often pronounced in the same class of cases in which digitalis excels. Its active principle apocynin is closely allied to digitalin in its action upon the heart and vessels and in doses of 1-12 to 1-4 of a grain quite fully represents the eliminative action of the drug itself, while it is less apt to disturb the digestive organs.

These remedies, briefly noted, comprise the main agents with which we may hope to relieve the effects of cardiac insufficiency, and in some cases a combination of two or even more of them seem to act better than one alone. When catharsis is desired and there is an objection to the salines, I have found, in a number of cases, that phenolphthalein in two or three grain doses night and morning will produce rather free watery discharges. The drug is easily taken and the elimination of chlorids from the diet will, as in renal dropsy, aid in the removal of edema. The placing of the digestive organs in the best condition to ensure assimilation is necessary and as full nutrition as possible to produce an improved blood-supply is almost imperative. Drugs which improve the general health will improve cardiac tone as well, and iron, arsenic and the mercurials all have a place in certain cases. The mercurials sometimes confer benefit out of all proportion to their general alterative action and, while such action is difficult to explain, there is no doubt as to their worth. Regulation of the patient's habits is also an essential to favor restoration to health.

Acute Pericarditis Following the Removal of Gonorrheal Pyosalpinx

By J. L. BUBIS, M. D., Cleveland

The following case is reported on account of the very meager and indefinite literature on gonorrheal pericarditis and because of the peculiar and unusual heart sound which this patient developed, a like description of which I have been unable to find.

The patient, aged 23, was admitted to Lakeside Hospital, suffering from sub-acute gonorrheal pus-tubes, her husband having gonorrhea at the time. Her temperature was 102.4° F., pulse 108, the respirations 28,

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Read before the Clinical and Pathological Section of the Cleveland Academy of Medicine, October 2, 1908 and the leukocyte count 14,280. All these were normal at the operation eight days later. Careful examination of the heart and lungs showed nothing abnormal. The family and personal history were unimportant. On November 16, 1907, both tubes and ovaries were removed through an abdominal incision. A small quantity of pus escaped from one of the tubes, but a culture from it proved sterile on ordinary media. The incision was closed without drainage and the patient left the operating room in poor condition. There was considerable nausea and vomiting, and about 24 hours after the operation she began to complain of dyspnea and precordial pain, and her temperature was 105° F., pulse 120 and respirations 40. Examination revealed pericardial friction rubs at the base of the heart and other symptoms of a beginning pericarditis. Toward evening, the respirations increased to about 70.

Next morning, November 18, the patient felt somewhat better. On examination, friction rubs could be heard and there were evidences of a beginning accumulation of fluid,—pain and distress in precordium, dyspnea, a feeling of tightness, restlessness, etc. On inspection, the apex beat was more diffuse and there was slight obliteration of the precordial interspaces. On palpation one could feel the friction rubs at the base and the force of the heart was much diminished. Percussion showed to a slight degree a characteristic increase in dulness. On auscultation, the to and fro friction rubs were heard, the heart sounds were less distinct but the second pulmonic was clearly accentuated, as was first described by Wathin, for this condition.

On November 19, she did fairly well till 4 p. m. and then complained of a chilly feeling. Her face was flushed. The dyspnea increased and the precordial pain again became acute. The same conditions as above stated were found at examination, but the rubs were not so rough or grating; there was a distinct valvular closure heard over the pulmonic area and all the other heart sounds were much fainter. The cartilages over the precordium were bulging and the dulness in Rotch's cardiohepatic angle was considerably increased. The most interesting, unusual and peculiar sign, however, was a dull, forcible, loud thud, systolic and diastolic in time. This was at first felt and heard by the patient herself. It rapidly grew in intensity and within 24 hours could be heard on entering the room. It could readily be felt, especially over the pulmonic area. Another point of great interest was the influence of respiration upon it, inspiration increasing its intensity very much. A pulsus paradoxus was also present. The same evening at seven, the patient had a slight chill, followed by a sweat and increased dyspnea. The face was flushed, she became delirious, a slight general edema was noticed, and the heart became dilated. The heart boundaries were one inch to the right of the sternum, the top of the third rib and the anterior axillary border. Rotch's angle was very obtuse. The intensity of the thud had not changed. Under treatment, her condition daily improved.

On November 24, eight days after the operation, the heart boundaries were at the midsternal line, at the third interspace above, and the apex was in the fifth interspace, one fingerbreadth inside the mammary line. No friction rubs were apparent. The thud became less marked. The temperature did not exceed 100° F., the pulse varied from 96 to 106, and the respirations from 24 to 28. The leukocyte count was 8,300. On doing the first abdominal dressing, a slight serous discharge was found which proved negative on culture. On December 9, 23 days after the operation, the patient, whose condition had progressed favorably and who had been sitting up with a back-rest for five days, suddenly became worse. She had a chill, precordial pain, dyspnea, and the temperature rose to 101.6° F., the pulse to 120 and the respirations to 28. The leukocytes were 15,000. On examination, the peculiar thud was again perceptible, the friction rubs were audible and palpable and the other signs of pericarditis were evident. Under careful treatment, the symptoms disappeared within three days.

On December 22, 36 days after the operation, the patient went home in fairly good condition. The heart boundaries showed the right border between the mid- and left sternal border, upper boundary at third interspace, the apex slightly diffuse and in the fifth interspace, one fingerbreadth internal to the mammary line. All heart sounds were clear and distinct, except the first mitral which was slightly muffled. There were slight friction rubs at the base. The thud had gradually decreased until it could neither be heard nor felt one week before she left.

About three months after she left the hospital she had gained considerable weight, was feeling perfectly well and had been able to do her own housework for the previous six weeks. The heart boundaries were normal. All sounds were clear and distinct. No friction rubs, murmurs, retractions or other abnormal signs were present. The pulse was of good volume and tension, regular and rythmic. The precordial prominence had almost disappeared. I have since heard that the menses have returned and that she is free from all pain and discomfort.

The treatment which was employed was at first directed toward the relief of the usual postoperative symptoms. Shock was overcome by raising the foot of the bed, hypodermoclysis, stimulating enemas and strychnin hypodermically. These were gradually discontinued, as her condition improved. Gastric lavage gave the most relief for the continued nausea and vomiting and great thirst. The distention was relived by the continuous use of the rectal tube and by hot turpentine stupes. For the pericarditis, the ice-bag was used locally, and concentrated solution of Epsom salts, three drams, every half hour, was given until good watery bowel movements were obtained. Aspirin, grains 10 every half hour for six doses, seemed to be of benefit during the second attack. The high temperature and delirium were controlled by an ice-cap and a sponge bath, followed by an alcohol rub. When these failed and the patient became exhausted from pain, one-eighth grain morphin, hypodermically, gave considerable relief. This was required only three times, however. Excellent results were obtained from digitalin, grain 1/100, every three hours for three doses, then every six hours. This was given for the broken compensation when other forms of digitalis had failed. Oxygen proved useful for the marked dyspnea, cyanosis and rapid respiration. After all acute symptoms subsided, stimulating nourishment was given and, with passive movements and massage, she rapidly regained her health and strength

In considering the etiology of the pericarditis in this case there is no doubt but that the pelvic infection was gonorrheal. There can be no doubt that there was an acute pericarditis followed by effusion. The first attack occurred within 24 hours after the operation. The second came on suddenly 23 days later from no apparent exciting cause. The question now arises what was the etiology. All textbooks mention rheumatism and allied conditions, sepsis and fevers, such as scarlatina, etc., as exciting causes. They also refer to the terminal pericarditis in chronic diseases, but very little is said about the gonococcus as causing pericarditis. The history and examination on admission were negative as regards any pericardial lesion. The pericarditis must have been caused, therefore, in the same way as surgical fever or by the gonococcus or its toxins or by mixed infection.

Although the goncoccus was not isolated from the pericardial fluid it should be considered a probable and strong causative factor. The case reported by Huber bears this out.

The nature of the peculiar thud already described deserves consideration. The patient first noticed it three days after the operation and in less than 24 hours it could be heard over the whole room. Its being influenced by respiration would lead to its classification as a pluropericardial symptom (Vierordt). There are several possible explanations for this peculiar sound as follows:

1. There may occur a loud snap following the presystolic murmur in mitral stenosis and this may be heard six feet away (Osler). In this case, however, there were at no time symptoms of mitral stenosis and the sound was neither short nor snappy.

2. In tuberculosis of the lung a loud systolic click may be heard, due to compression of a thin layer of lung and the expulsion of a bubble of air from a softened focus or from a bronchus. In this case there were no symptoms of tuberculosis and no click.

3. Such a sound may be heard in pyopneumocardium but it is very little influenced by respiration, or if at all it would probably be decreased in inspiration.

4. Pseudopericardial sounds, as pleuritic splashing sounds simultaneous with the motion of the heart, occur in hydropneumothorax in which the motion of the heart is communicated to the fluid. This was considered a possible condition although no other diagnostic symptoms were present.

5. Beating of the heart against large cavities near it might produce such a sound but none such were present except the stomach. If this were much dilated such a sound might have resulted, although in inspiration the stomach would have been lowered and the sound would have then been decreased. Besides this there were no symptoms of dilated stomach during the second attack and the thud was too high, it being in the second and third left intercostal spaces.

6. It was not a valvular sound as the valves were all acting normally except during the stage of acute dilatation when there was a relative insufficiency.

7. Powerful contractions of a partially filled ventricle might cause it, but the heart was apparently receiving the proper amount of blood and the valves were in good condition.

8. Extrapericardial sounds, pleuritic sounds caused by contact of the plura especially at the lingula, correspond with the motions of the heart and are influenced by respiration, especially by inspiration. This seemed the most probable condition although I believe it would hardly explain the character of the thud.

For permission to report this case I wish to thank Dr R. H. Sunkle who operated upon her during my service in the gynecologic department of Lakeside Hospital. I also wish to express my indebtedness to Drs F. C. Hall and C. W. Stone for their kind criticism.

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Clean Milk

By CHARLES CRISTADORO, San Diego, Cal.

Over two years ago I wrote an article which appeared in the *New York Medical Record,* advocating the purification, by centrifugal separation, of all milk.

To illustrate, I have seen a delivery of milk made to a creamery, say 40, 40-quart cans. The milk came from what was rated then as a clean dairy, far above the average. That milk, after the usual inspection, was dumped into the shute and before reaching the milk reservoir above the milk separators passed through eight brass strainers of the finest mesh. Ordinarily milk gets one straining through the spout of a milk pail. The milk was now separated by being passed through Delaval separators, pumpkin-shaped steel bowls so arranged as to revolve or spin like tops at the rate of 7000 to 8000 revolutions per minute. Centrifugal force sprays the incoming milk the moment it strikes the interior, gravity keeping three separate and distinct bodies practically apart in the machine. The mechanism is so arranged that the separated cream and skimmed milk leave the machine by separate outlets, as fast as the original milk comes in. A stream of milk entering the revolving bowl and a stream, small, of cream and a copious stream of skimmed milk emanating from the outlet of the bowl, at one and the same time.

The centrifugal force is so great as to reduce the incoming milk to an almost infinitesimal spray, and instantly gravity steps in and asserts itself. The cow-manure, hairs, seeds, dust and atmospheric detritus generally, pus, blood, etc., all classed under the head of "dirt," are thrown to the circumference of the bowl and held there, because of their specific gravity exceeding that of skimmed milk and cream. The skimmed milk forms the next layer and then the cream, the line of blue and yellow demarcation being quite distinct. So the milk is fed in, the separator revolves, the "dirt" accumulates and the streams of skimmed milk and cream run back once more into the original cans, or the skim milk is diverted for pot-cheese or stock feeding, and the cream sold *per se*. You stand by and see the batch of milk run through and then watch the operator clean the separator. See him, after the bowl has ceased to revolve, reach his hand in and bring out a long strip of more or less slimy, nondescript matter, heavy at one end and very dark in color and tapering off, much like the elongated tongue of a dog.

Examine it carefully. At the heavy or basic end you will detect manure in *propria persona*. No mistake about it. Then in the mass of brownish material appear bits of grass and hay, leaves, hairs, coarse and fine, seeds, dust and the pus-like substance growing lighter in color until it reaches the end. This is the "dirt" in the milk that shows up after eight strainings. Ordinarily milk receives *one* milk-pail spout straining. It is always noted that in winter, when the cows are confined to stable-yard and stalls, the milk is much "dirtier" than in the summer when they are out to pasture.

Oftentimes blood shows up plainly in the "dirt" from the injured teat of an animal. Sterilization, coupled with all the previous precautions, from proper food to cooling and aerating the milk, are good, proper, necessary, but they really amount to very little when, despite them all, *filthy milk is the result*. Some scientists figured out to an acre the ground that could be fertilized by the cow-manure that daily arrived in Paris in the form of milk.

The question arises as to the value of sterilization as a complete solution of the problem of unsanitary milk. If in the stream or in the spring whence you draw your water is a dead hog, you do not solve the problem by boiling the water, you remove the hog. So with milk. The sterilization of "dirt" is but a poor makeshift. Better that by purification the milk be prepared for sterilization.

Two cans of cream made from the same dairy of cows; one is machine-separated (and purified) cream; the other is skimmed from the milk by hand. When the can of hand-skimmed cream it bitter and sour, the machine-separated can of cream is yet sweet and wholesome. There must be a good cause for this and it can be accounted for by the machine-clarification or purification ejecting material that would ferment the cream. The remedy of purification may take some study to apply it to the milk supplies of large cities, but the problem must be met. Sterilizing filth simply changes the condition slightly, the filth is still there. The problem of milk purification can be met only by *centrifugal clarification.* No strainer, no other process will so exterminate the "dirt" from milk.

I have called the attention of the Board of Health of one of the largest cities in the land to this matter, but no attention has been paid to my communication sent nearly two years ago. Either there is no filth in milk or, if so, it is "good for the stomach's sake," or sterilization is presumed to meet the problem, or the process of purification by centrifugal means is impractical.

But the fact stands that cow's milk is the filthiest food that comes upon our tables, that it is a subtle vehicle for cow-manure, blood, pus, hairs, seeds and dust and dirt generally, from the unclean hands of the milker to that precipitated in the milk pail from the general environment.

Who will "bell the cat"? It needs it very badly for it is a very unsanitary cat.

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EDITORIAL

The New Laboratory of Experimental Medicine

The dedication of the H. K. Cushing Laboratory of Experimental Medicine on November 30, 1908, was an event of unusual importance from a medical standpoint, not only for this city but for all this section of the country, since it establishes a milestone in the progress of medical education.

By means of it the strictly laboratory work and the practical bedside clinical work will be more closely correlated than has been possible in the past. It is planned that Dr George N. Stewart, the Director of the laboratory, shall have an official position upon the staff of the Lakeside Hospital, so that he and his assistants shall be closely in touch with the clinical work in the wards. The institution will be not only a clinical laboratory, in the usual acceptance of the term, but its scope will be wider, it will furnish facilities for research work which, it is hoped, may lead to the solution of some of the innumerable problems in medicine today. The work will be similar in character to that followed out in the Rockefeller Institute in New York City, which has already been productive of such excellent results.

In all probability the "unit plan" of research will be followed, a group of workers taking up some special line of investigation and bringing to bear upon it their special training in different lines of work, so that the subject may be attacked from various standpoints.

The establishment of the laboratory was made possible, thanks to the generosity of Colonel Oliver H. Payne and Mr. H. Melville Hanna, who donated first $200,000 and later an additional $17,000, the income from which is to be devoted to the purchase of additional apparatus from time to time. The annual income from the total endowment will amount to about $13,000.00. With characteristic modesty they disclaim the credit for themselves and refer it to Dr Edward F. Cushing for his suggestion of the plan. As they aptly put it, they represented "his committee on ways and means" for the carrying out of this project. The building has been named by the donors after Dr Henry Kirk Cushing, who has exercised such a remarkable influence for good in professional circles in this city.

The dedication exercises were attended by some 36 representatives from local and out-of-town universities, including Harvard, Johns Hopkins, Chicago, Rush, Northwestern, Indiana, Pennsylvania, Toronto and McGill. The presence of these delegates, many from a considerable distance, is some indication of the importance which these institutions ascribe to the new laboratory. The address was delivered by Dr William H. Welch, of Baltimore. This will appear in full in the Journal at an early date.

Foot and Mouth Disease

After a period of six years immunity in this country the so-called "foot and mouth disease" has appeared in New York, Pennsylvania and more recently in Michigan. For a period of many years, but especially since 1886, the disease has been the cause of great economic losses throughout Europe, the estimated money loss in Germany in one year being 100,000,000 marks. The disease affects animals of most species but especially those with the cloven hoof, cattle, goats and sheep. It is characterized by the appearance of small vesicles in the mouth and on the lips, which rupture, leaving a reddened sore place which extends till the individual ulcers may reach the size of a dollar. In severe cases the mucous membrane is so undermined that the whole surface of the tongue may come off under handling. Similar lesions appear in the clefts between the hoofs, more frequently in such animals as are walked over rough ground or made to stand in wet stalls, and may reach a degree of severity causing the loss of the hoof. At first there is dryness of the mouth with a decrease in the amount of saliva followed by marked salivation, so that there is a sort of fringe of mucus hanging from the animal's jaws. There may be so much fluid that the stall is actually saturated. Fever, loss of appetite and progressive emaciation are the general symptoms. In light cases the cure takes place spontaneously in two to three weeks, but this outcome is comparatively rare. In the severe epizootics there is a death rate of from 10 to 50% in adults, and as high as 80% in sucklings, the latter usually dying within a day or so of birth. Even in the cases which tend to recover, there is frequently severe lameness, the udder is often infected resulting in extensive abscess formation with permanent loss of function for dairy purposes, so that the total loss to the farmer is from 30 to 50% of the total value.

In very severe cases there may be the apoplectic form, with nasal hemorrhages and sudden death. In rare cases there is no eruption and the case may simulate anthrax. The exudates from the lesions are highly contagious and infection from the milk is a ready means of spread if the milk is not boiled. In the advanced stages of the disease the milk loses its characteristics, being more like colostrum. The contagium succumbs readily to disinfectants, to heat and to drying, but is very resistant to cold as evidenced by the Massachusetts epizootic, which took place in the depths of winter.

It may be transferred indirectly by hides, ropes, halters, forage, bedding, etc., and it is probable that the present infection was brought into the country in some such way, as cattle are quarantined for a time sufficiently long to cover the incubation period.

The actual contagium has never been isolated nor even seen, all that is known about its morphology being that it is small enough to pass the pores of a Berkefeld filter and not those of a Kitasato filter. That it is not a toxin has been definitely proved by the experimental fact that it is self propagating. The extreme readiness with which the infection is carried makes it dangerous to study, and the Government has for this reason permitted no study in this country. In Germany there is a suit for damages by the farmers in the neighborhood of one of the experimental laboratories which they claim has been instrumental in the spread of the disease.

Treatment of the individual cases is not satisfactory, the best than can be done being to treat the symptoms as they arise. The only available means of combatting the disease are segregation with absolute quarantine, both as to entrance of cattle into the infected district and exit from it, with the immediate slaughter of all animals which show any signs of the disease. By the policy of purchase and destruction the infections which have reached England have been extirpated, and the New England epizootic of 1902 was similarly stamped out. Slaughter of the animals and deep interment must be followed by thorough cleaning of the stables, with the burning of all manure and fodder, followed by the exclusion of new animals for a period of several weeks. Animals allowed to live are constant sources of menace, the more because the disease may be transferred by the smaller animals such as cats, dogs and pigeons, and in a counry like the United States, where transportation is so extensive and rapid, there is much danger of the disease passing bounds as it has done in Europe.

Human beings are also susceptible, though in a less degree. The symptoms are usually slight, though there may be diarrhea of so severe a type as to cause death, especially in children who have been given the infected milk before it has been boiled. Human beings may again transmit the disease to cattle and keep up the circle of infection. It is probable that the Government will act with great vigor in the present epizootic, as was done in the one in 1902, and that it will be stamped out in a few months at most. The chief danger lies in concealment of cases by the farmers, a short sighted policy which in 1902 prolonged the epizootic for several months, and cost the very farmers who concealed the cases far more than if they had aided the Government in its efforts.

The Disposal of Soiled Dressings

The ultimate destination of discarded dressings is seldom considered by the attending physician, and yet it is of the greatest importance that orders be given that they be burned or otherwise rendered harmless unless they are to be washed, sterilized and used over again for that particular patient. At present the Health Department finds that large quantities of filthy surgical dressings, many coming, no doubt, from highly infectious cases, are finding their way to the various city dumps *via* the ash-can route. These dumps furnish a livelihood to a large number of persons who pick over the debris for old iron, bones, paper, rags, etc. Surgical dressings are considered a specially valuable find, since the bandage material is usually in good condition and together with the cotton finds a ready sale for paper stock. In the manufacture of paper, we understand, this stock is not of necessity sterilized, so that the danger of a wide distribution of infectious material is evident. Not only are these materials sold as rags, but it has been found that the bandages have occasionally been sewn together and used for clothing, no doubt without proper washing and disinfection. It would seem unfair to deprive the scavengers of their livelihood and at the same time it is impracticable to supervise their operations. The Health Department, therefore, urges that physicians direct that all surgical dressings be burned so as to obviate this danger. In many apartment houses, especially during the summer time when the furnaces are not in operation, the burning of dressings is not always easy. In such cases, soaking them in solutions of carbolic acid, chlorid of lime or other disinfectants would be a simple matter and quite efficacious.

The Romig Fund

The collection of a fund by the *Cleveland Press* to defray the expense of an operation upon a blind resident of this city was no doubt actuated by philanthropic motives but it was without sufficient investigation, it was quite unnecessary and inflicted a great injustice upon the profession of Cleveland as well as upon all those who contribute to the support of our numerous hospitals. In several of our free dispensaries are eye clinics with the leading oculists in attendance. In any one of these this patient could have received expert care absolutely free of charge. Even if his condition had required admission to the hospital wards, no charge would have been made if he could not afford to pay.

The average layman perhaps does not understand the extent to which not only the poor but also those who are in better circumstances avail themselves of these free dispensaries. In the large cities the condition is often so acute as to be known as the "dispensary evil," since it tends to pauperize those able to pay and besides takes the means of support from the practising physician to whom these well-to-do patients would otherwise have to go. While an attempt is made by the dispensaries, assisted by the Associated Charities, to discriminate between these two classes, in any doubtful case the patient is always given the benefit of the doubt lest by mistake a deserving case be refused assistance.

Department of Therapeutics

CONDUCTED BY J. B. McGEE, M. D.

Opium in Typhoid: Thomas McCrae, in the *Journal A. M. A.* for September 19, considers the use of opium in typhoid fever, and opposes the views laid down in the books as to the indications for this drug. Its general indications in this disease are: first, restlessness and sleeplessness; second, diarrhea; third, hemorrhage; and fourth, abdominal pain. (1) In restlessness and insomnia its use in small doses is sometimes advisable but, if indicated, it often seems better to give small doses of morphin hypodermically. (2) In diarrhea, here, as in diarrhea in general, opium should be the last drug to be used instead of the first, as is too often the case. The cause should be searched for first, for too often this is left to act and opium is given to prevent the result. The diet should be cut down to albumin-water, or, if milk be given, it should be boiled, and sedatives, such as bismuth, may be given. If opium is needed it should be given as the starch and laudanum enema. Given by mouth opium favors distention and conceals the most valuable symptom of perforation, abdominal pain. (3) In hemorrhage the standard treatment is to give opium, especially in the form of the lead and opium pill. He takes exception to this treatment although sanctioned by tradition and authority. The advantage claimed is that peristalsis is lessened but, he asks, what proof is there that this is an advantage? It may lessen the chance of a clot being dislodged, but when we think how rarely a clot is found at autopsy in patients who have died after hemorrhage, the importance of this does not seem great. Against the use of opium there are several points. It increases the chances of distention, in itself a serious matter. In the case of gastric ulcer, distention increases the chances of perforation and the same is probably true of the bowels, and in a considerable number of cases hemorrhage and perforation occur together. Give opium for the hemorrhage and we know the end. It comes painlessly but surely. Any one who has been called in consultation to decide as to the possibility of perforation in a patient who has had large doses of opium, knows how hopeless it is to give any opium. Then, too, the giving of large amounts of opium seems to have an injurious effect on the general condition of the patient. There seems no doubt that the use of the calcium salts, preferably the lactate, is helpful. As a prophylactic, too large doses should not be given, probably 20 grains a day is enough. In case of hemorrhage the drug should be begun at once, 30 grains a day may be given and for rapid action may be given subcutaneously in one percent solution. To keep the patient quiet, to limit the intake, to apply a light ice-bag to the abdomen, to give the calcium salts, not to give opium, and not to try to do too much, seem the main points in the treatment of this complication, which after all is not usually so dangerous as has been thought. (4) In abdominal pain, under no circumstances should opium be given, for pain is our chief aid in the recognition of perforation. The first thing in the treatment of abdominal pain is to determine the cause; if due to a distended bladder, meteorism or impacted feces, we are not going to help matters, but rather make them worse, by giving opium. If the cause can be found the indications are clear; if it can not be found we must not give a drug which prevents our determining the cause, certainly in the more serious conditions. When the cause is not determined, simple measures, as the application of stupes or small doses of bromid of potassium or codein, may be enough. If not, the use of a small dose of morphin one-eighth grain hypodermically is preferable to the opium and in this dosage it is not apt to mask abdominal symptoms.

Veronal Sodium: In *Merck's Archives* for October *(Med. Klinik),* Ziehen draws attention to the therapeutic value of soluble hypnotics of the veronal group, particularly the sodium salt of veronal. Veronal sodium is a white crystalline powder one part of which is readily soluble in five parts of water. Veronal itself requires 145 parts of water. The solution has a very bitter and alkaline taste. Cases were seen in which veronal had little effect, but in which the same dose of veronal sodium given several days later was satisfactory. The opposite condition, however, was also met with and the author is not convinced that the sodium salt shows a superior veronal action. He concludes (1) the action of veronal sodium is the same as that of veronal. Veronal sodium contains about 90% of veronal, hence 0.5 grams (eight grains) of veronal sodium are equivalent to about 0.45 grams (six grains) of veronal. (2) With an empty stomach, veronal sodium will act more rapidly. (3) Veronal sodium is more readily employed per rectum. (4) The taste of veronal sodium is more disagreeable. This is not noticed so much with an aqueous solution, but, if given in powder or tablets, veronal is to be preferred. (5) Owing to greater solubility, permanent solutions of veronal sodium can be readily prepared and other drugs may be added. (6) The by and after effects of both preparations are the same.

Exophthalmic Goiter: G. E. Pfahler, in the *New York Medical Journal* for October 24, summarizes the results obtained by the X-ray treatment of exophthalmic goiter. There have been recorded at least 51 cases treated by the Roentgen rays, and of this number 42 cases were followed by good results. Good results showed in some instances within 48 hours and almost without exception within a month and in most cases almost complete recovery was obtained in from three to six months. He concludes: (1) Decided improvement may be expected in about 75% of cases. (2) This improvement consists of an increase in weight and strength and gradual disappearance of the Basedow symptoms. (3) Some improvement should be noticed within a month and after six to a dozen treatments. (4) When this treatment is properly given there appears no danger and he can see no objection to recommending this trial of a month in all cases.

Digitalis: In the *Proceedings of the Royal Society of Medicine* for July, A. M. Gossage treats of the tone of the cardiac muscle, and as the dilated, toneless heart has to work too hard and is always in danger of failing, our object in treatment obviously must be to restore some of its tone. It is, of course, possible that this can be done by mechanical means but these are often insufficient and have to be supplemented by drugs. Unfortunately the action of drugs is seldom a simple affair and the results of experiments on animals are not always borne out in the clinical treatment of patients. Digitalis and strophanthus have, in animal experiments, a very similar action, except that digitalis constricts the vessels, while strophanthus does not, and thus digitalis has the greater effect of the two in raising the blood-pressure. Among other vessels, however, it also contracts the coronary arteries, the flow of blood through which is of immense importance to the heart, increase of flow leading to increased size of the heart contraction, and vice versa. Cushing points out that digitalis has two opposing actions on the heart, first as a stimulus and second as a bridle, and that it is difficult to predict which result will follow its exhibition in a particular case. It seems possible that a very large part of the action of digitalis may be explained by regarding it as a powerful stimulus to the heart, very similar to the interrupted electric current in Porter's experiments. It would stimulate the vagus, the muscle directly and the tone. Practically, as Mackenzie has recently pointed out, it is only in cases of dilatation that marked results are obtained, or in other words that digitalis acts therapeutically mainly on the function of tonicity. Improvement often occurs quite suddenly, although the drug may have to be administered for several days before any effect is produced. It is in cases of recent dilatation or recent increase of dilatation, when the muscle is healthy, that the tone of the human heart seems especially susceptible to the action of digitalis. There are of course cases which do not respond to the drug, although there is dilatation of the heart. In these the cardiac muscle is probably severely injured as by the toxin of an acute fever or by a myocarditis. In other more chronic cases the elasticity of the cardiac wall may be lost.

Official Drugs: Oliver T. Osborne, in the *Journal A. M. A.* for October 31, states that with the aid of an honest druggist, by means of our Pharmacopœia and National Formulary, we hardly need a single proprietary mixture in the medicinal treatment of disease. While advising the use of some of these preparations, he does not wish to be understood as claiming that it is not better to combine one's own prescription better to fit the individual case, but these official preparations preclude the necessity for using proprietaries. As regards iron preparations, no iron will act any better than an inorganic iron. If there is an idiosyncrasy against it, smaller doses should be used and in fact too large doses of iron are ordinarily given. He defies any "patented" iron preparation to do therapeutically what he can not do with one of the five official preparations he mentions. We do not need a "patented" bitter tonic. We have the compound tincture of gentian, the compound tincture of cinchona, and the tincture of nux vomica, and we need, for bitter tonic purposes, no other. Concerning the long list of antipyretic preparations, cough mixtures, hypnotics and nerve sedatives, he asserts that any physician who thinks he is unable to write the prescription needed for the individual case should set to work to instruct himself in the method of writing for such drugs and arranging such pharmacally and pharmacologically correct combinations as will suit the needs of his patients. In the coal-tar antipyretics, the official antipyrin, acetanilid and acetphenetidinum (phenacetin), fill all the indications needed, and caffein, camphor, soda, salol and any other drug can be combined with them if desired. There are no combinations of cough mixtures or hypnotics that cannot better be combined by ourselves and for much less cost to our patients. None of this, however, should prevent a physician from trying a new drug if he thinks it an honest one, as we should ever be ready to make use of a valuable discovery, but never to further a fraud.

Adrenalin: In *American Medicine* for October, Samuel Floersheim summarizes the use of adrenalin in heart affections. It is one of the most powerful heart stimulants known and has slowed a running heart, contracted a dilated and flabby heart, increased the flow of blood, lessened the murmurs when present and has acted most admirably in cases in which a heart stimulant was urgently needed. It has given excellent results when the usual heart stimulants failed, although he does not wish to be understood that in adrenalin we have a superior heart stimulant to strychnin or digitalis, except in selected cases. He quotes Elsner as having used it hypodermically with marked success when strychnin failed. It is especially indicated too in cardiac failure and vasomotor paralysis occurring during general anesthesia. Its hypodermic use is indicated in cases in which diminished blood-pressure exists. In pericarditis with effusion he has aspirated most of the fluid first, and then injected, through the same needle, adrenalin into the pericardial sac with no subsequent untoward effect.

Serum Disease: In the *Therapeutic Gazette* for October *(Interstate Medical Journal)* Saunders states that very soon after the discovery and general use of a diphtheric serum, the profession became acquainted with a group of phenomena, following the hypodermic injection of normal antitoxic or bactericidal serum, to which the name "serum disease" is now applied. In general, these symptoms consisted of eruptions, and joint pains occurring in a certain proportion of cases. Physicians regarded these symptoms as uncomfortable, though harmless, after effects in susceptible individuals and attributed the rashes to some toxic substance in the horses' blood-serum. This was a mistake. The symptoms observed were only a few of the phenomena which attend a very severe internal disturbance, due to the introduction of heterologous proteids into the circulation. Recent investigations have revealed the fact that remarkable changes take place in the organism injected with the serum, so that the disturbance has been dignified by a special name "Serum Disease." Although manifest symptoms do not occur in more than one-third of all cases, the cellular reaction is probably present in every individual who receives an injection and the phenomena of anaphylaxis may be observed to a greater or less degree if the proper tests are made. The serum rash varies in character; a very striking symptom is edema of the skin and a very serious form is the hemorrhagic type in which hemorrhages occur in the skin, but this is fortunately rare. Joint pains are frequently observed and dysmenorrhea may be present in women. He offers the following practical rules: Curative sera are not the harmless substances we originally supposed. Immunizing injections of serum should not be employed when isolation will prevent the disease with a reasonable degree of certainty and the children can be watched. Serum should not be used in asthmatics or in those suffering from Graves' disease or the lymphatic constitution, except in developed diphtheria. The use of bactericidal sera of doubtful value should not be encouraged without careful consideration of all the possible bad effects from anaphylaxis. If a second dose of serum must be given during the few weeks following a primary injection, small repeated doses are preferable to a large single dose. On the other hand, one large initial dose is probably less harmful and far more effective than several small doses given over several days.

Mercury in Tuberculosis: In the *Monthly Cyclopedia and Medical Bulletin* for October, Chas. E. de M. Sajous considers the recent claims of Barton L. Wright that mercury produces marked improvement in cases of tuberculosis. The use of this metal in tuberculosis had already run the gauntlet of clinical experience and its disappearance from the horizon some years ago betokens a similar fate for the method employed by Wright. Advocated several decades ago by Baumes and Ramazzini and more recently by Havilland Hall and others, Daremberg's declaration that "the history of mercurials in the treatment of pulmonary tuberculosis is made up of a long series of deceptions" is an appropriate epitaph when the question as a whole is judged from the narrow standpoint of prevailing doctrines. The beneficial influence of mercury observed by certain authors is explained by the fact that the drug increased the bactericidal properties of the blood and a feature to be emphasized is the fact that it is by means of small doses that these authors obtained their beneficial effects and it is also with moderate doses at prolonged intervals that Surgeon Barton L. Wright obtained his good results. The effects of the large or frequently repeated doses are familiar to every one and under such doses the proteolytic or digestive properties of the blood become so intense that blood-cells and tissues even are broken down and a new source of "consumption" is added to the tuberculous process. Sajous' investigations in this connection suggest (1) That small doses of mercury are beneficial in the treatment of tuberculosis because they enhance, to a marked degree, the production of bacteriolytic and antitoxic substances in the blood and thus insure the destruction of the tubercle bacilli and their endotoxins. (2) That full or large doses of mercury are harmful in this disease because they provoke an excessive formation of those substances and thus cause hemolysis and even cellular autolysis when sufficient quantities to induce mercurialization are administered.

Acute Coryza: Beverly Robinson, in the *New York Medical Journal* for October 31, believes that if acute coryza is seen at its earliest stage when the patient has begun to sneeze, with or without slight discharge from the nasal passage, we should try to abort it. While quinin in two to four grain doses every six hours will occasionally accomplish this, his personal preference is ammonium carbonate. No other agent will accomplish it so frequently and with apparently so little objection. It should be given preferably in mistura amygdala or in water with syrup of acacia and orange flower water; a grain to the dessertspoonful is a suitable dose, repeated every hour for 21 consecutive hours and later at longer intervals. Every two or three hours is frequent enough for the second 12 or 24 hours and if at the end of 48 hours the attack is not entirely aborted, it is useless to continue the remedy. He has come to regard ammonium carbonate as nearly a specific in the treatment of acute coryza when used soon enough, repeatedly and in suitable doses. Locally there is no spray, powder or inhalation which *per se* will abort a coryza successfully. After the effort to abort an acute attack of coryza has failed, the most effective and least injurious treatment is the combination of sweet spirits of niter and spirit of mindererus, 20 minims of the former and a dessertspoonful of the latter every two or three hours, diluted with water. This is not unpleasant and proves effective. While taking it, one must be careful not to sit in a draught or go into the open air unless in mild weather. Locally, when the coryza has lasted several days, he believes that bismuth subnitrate with a little powdered acacia and morphin, blown into the nose with a simple powder blower, is of service in lessening the discharge and irritation. For many years he has made use of the vapor from equal parts of oil of eucalyptus, camphor and menthol in a suitable nasal inhaler. When the discharge is thick and purulent, he advises an ointment of oleoresin of cubebs m. 20, powdered camphor grs. 11, glycerin dram one, and white petrolatum drams three. This ointment should be applied to either nostril with the tip of the finger and sniffed up or drawn upward and backward till detected or felt in the nasopharynx.

Academy of Medicine of Cleveland

CLINICAL AND PATHOLOGICAL SECTION

The fifty-fourth regular meeting was held Friday, November 6, 1908, at the Cleveland Medical Library, W. G. Stern in the chair.

C. A. Hamann presented a patient upon whom he had operated for popliteal aneurysm, the result of a severe wrenching of the knee. A Matas operation had been attempted but, owing to the nature of the sac wall, which was formed largely from fibrous tissue instead of the true arterial wall, this procedure was impossible. The artery was therefore tied above and below and the contents of the sac evacuated. In the discussion F. E. Bunts mentioned a similar case that he had recently seen and another case of femoral aneurysm just below Poupart's ligament. In this instance he had attempted the Matas opertion but found it impracticable and was forced to tie the artery above and below the fusiform sac. The clot was then evacuated and the wall folded in in successive layers and sutured. The patient made a good recovery. Ralph Updegraff also took part in the discussion which was closed by C. A. Hamann.

J. Phillips showed a woman with acromegaly. The characteristic enlargement of the hands, feet, jaw and head were well marked. There was a fibrous myocarditis with enlargement of the heart and arteriosclerosis. He was inclined to think the vascular changes were as important as the bony ones, since in looking up the literature he found but one case in which there was no cardiac hypertrophy. Discussion by F. E. Bunts, C. F. Hoover, W. B. Chamberlin, W. G. Stern and E. O. Houck.

J. Phillips reported a case of cervical ribs and showed radiographs. The condition had been discovered in a routine physical examination of a patient with cardiac disease. It formed a pulsating tumor extending two inches above the clavicle but caused no symptoms. A shorter cervical rib was found in the opposite side. A resume of the anatomic conditions and symptomatology, as usually found, was then given.

C. L. Cummer showed a patient with syphilis of the spinal cord. The symptoms at first were entirely referred to the bladder. He was unable to void urine and required catheterization. After he left the hospital he was again admitted, having fallen unconscious on the street. There was a clear luetic history and under treatment with mercury the condition was apparently improving.

The program was as follows:

(1) Some Clinical Observations on Dementia Precox, J. S. Tierney. (To appear in full in the JOURNAL.)

(2) A Clinical Report based on a Consideration of 42 Consecutive Abdominal Hysterectomies for Uterine Fibroids, F. E. Bunts. (Appearing in full on page 660.)

M. Rossenwasser in the discussion agreed with the speaker as to the unadvisability of myomectomy. His preference was for supravaginal hysterectomy of which he had had 28 cases with two deaths since 1901. He emphasized the importance of most perfect hemostasis in these operations. A preliminary cureting was quite unnecessary. The appendix should not be removed at the same time unless it were diseased. Salt solution he used per rectum if necessary but he did not leave any in the abdomen before closing. The mortality in these cases had been enormously reduced within recent years, thanks to improved technic. W. H. Weir thought that a larger percent of cases would show malignancy than the speaker's figures showed. The removal of the appendix at the time of the operation was a question that depended upon the operator's personal experience, if one had seen a hysterectomy case die subsequently of an appendicitis one would be more inclined to remove the appendix whenever possible if the condition of the patient permitted. The opinion that all fibroids should be removed seemed to be growing, even in a recently published work on medical gynecology, in which presumably medical measures would be advised in all conditions that could be improved by such treatment, operative treatment was advised.

W. H. Humiston thought the cervix should be cureted before supravaginal hysterectomy so as to lessen the chance of infection but the corpus should not be cureted for fear of additional hemorrhage. Since the ovaries are usually diseased if fibroids exist, he usually removed them, together with the fibroids. Supravaginal hysterectomy is the most satisfactory operation we have in surgery. It is not difficult but careful hemostasis and covering of raw surfaces are necessary. Drainage he thought unnecessary. The possibility of malignancy should always be considered in these cases, it was often found accompanying fibroids. Years ago he had used the Apostoli treatment for fibroids but had abandoned it. A recent case of fibroid complicated by pregnancy and an ovarian cyst was then described and photographs shown.

F. E. Bunts, in closing the discussion, referred to some of the indications for operation but said that these had to be disregarded upon some occasions if the desire for children was great. The pathologic examination of all his cases had not been as complete as it might have been owing to the fact that until recently there was no provision for it at the hospital.

(3) Vagus Neuritis, C. F. Hoover. Five cases of bradycardia were described and two cases of paroxysmal asthma with pulmonary emphysema were cited as due to inflammation of the vagus at various points between the base of the skull and base of the heart. In two of the cases a marked accentuation of the bradycardia could be induced by employing moderate pressure over the vagus trunk at the middle of the neck. In two other cases in which the bradycardia was promptly corrected by the administration of atropine the heart rate was unaffected by pressure over the vagus trunk. In one of these cases the vagus trunk was involved at the site of the vagus ganglia and in the other case the vagus was diseased in the mediastinum secondarily to pericarditis. The response to pressure over the vagus in neuritis of this nerve will depend upon the part of the nerve trunk which is implicated in the inflammatory process. The variety of symptoms resulting from vagus neuritis are not to be wondered at if we consider the very decided dissociation of apparent receptors in spinal nerves which are demonstrable by subjective perception and various reflexes. All experimental devices employed so far have been very crude attempts to reproduce the clinical symptoms of vagus neuritis. The failure to reproduce these symptoms experimentally must not be accepted as evidence against the clinical interpretation of the subject.

Experimental Medicine Section

The fortieth regular meeting was held at the Cleveland Medical Library on Friday, November 13, 1908, C. A. Hamann in the chair. The program was as follows:

(1) The Nervous Control of Sugar Production by the Liver, J. J. R. Macleod, H. O. Ruh and R. M. Waters. The question as to the nature of the fibers in the great splanchnic nerve which when stimulated cause hyperglycæmia, and the behavior of the reducing power and rate of excretion of the urine during the stimulation were discussed. Since the experiments relating to the matter have already been given in this Journal (Vol. VII, p. 448), further description here is unnecessary.

(2) The Cause of Asphyxial Glycosuria, J. J. R. Macleod. This communication dealt with the source of the increased amount of reducing substances in the blood resulting from asphyxia or curare poisoning. It was pointed out that such an accumulation of reducing substance might be the result of increased production or of diminished destruction of sugar in the body. To settle which of these mechanisms are involved,

the liver was removed from the circulation by anastomosing the portal vein to the vena cava and by ligating the hepatic arteries. It was found that asphyxia and curare poisoning no longer caused hyperglycæmia. Increased production of sugar from the liver is therefore the cause of asphyxial hyperglycæmia. In the next series of experiments, the hepatic nerves were all cut and the animal then asphyxiated with the result that hyperglycæmia still occurred. This shows that the asphyxial blood acts directly on the liver cells and not by stimulating the nerve centers controling the glycogenolytic activities of the liver. A number of experiments were then reported with the object of demonstrating what property of asphyxial blood endowed it with this glycogenolytic effect. In these, pieces of glycogen-rich liver were incubated in flasks containing defibrinated blood and having either oxygen or hydrogen or carbon dioxide bubbling through them. It was found that hydrogen did not accelerate glycogenolysis whereas carbon dioxide did. It must therefore be the excess of this gas in asphyxial blood which endows it with glycogenolytic properties. It was pointed out that the result is in keeping with similar ones by Schierbeck and others who showed that carbon dioxide accelerates the action of amylases. The acids in asphyxial blood may assist carbon dioxide in its action.

Discussion by R. G. Perkins, A. S. Storey, F. C. Herrick, W. H. Weir, C. A. Hamann, J. H. Lowman, D. Marine; closed by J. J. R. Macleod.

Book Reviews

High Frequency Currents, by Frederick Finch Strong, M. D., instructor in Electrotherapeutics at Tuft's College Medical School, Boston. Cloth bound, 289 pages, 183 illustration. Price $3.00. Published by Rebman Company, 1125 Broadway, New York.

This little book, the first of its kind dealing exclusively with high frequency currents, is one of interest to the electrotherapeutist. The electron hypothesis is given due consideration and electrophysics from this standpoint is discussed in several chapters. Sixty-five pages are devoted to types of foreign and domestic apparatus, with good descriptions and illustrations. In eliciting the physical factors involved in the generation of high frequency currents, diagrams, showing the analogy between running water and electric currents, are used. The phenomena and physical properties of high frequency currents receive attention and a chapter devoted to milliampere-meters for measuring these currents is unique. About one-half the book is devoted to the technic and application of this form of currents in the treatment of disease. The author thinks that electrotherapeutics will soon become the most important subject in medical education and also intimates that through this subtle form of electricity the gap between organic and inorganic chemistry may be bridged.

The Colorado Souvenir Book, for the International Congress on Tuberculosis, Washington, D. C.

A well illustrated book of some two hundred pages, published by the Colorado State Organization of the International Congress on Tuberculosis, having for its keynote, "Colorado for Health, Colorado for Wealth, Colorado for Happiness."

The first part of the book contains a series of articles by Colorado physicians—"an endeavor to set before the profession the correct position of the state with reference to tuberculosis." They contend that the climatic attributes of Colorado—sunshine, cold, dryness, moderate winds, and high altitude—offer unusual advantages for *suitable* cases, namely, all those in the early stages of the disease. On the other hand advanced cases, with marked tissue destruction and enfeebled vitality, as well as the victims of emphysema or pronounced disease of the heart, arteries, or kidneys, do better as a rule in warm, moist, and more equable climates. "Generally speaking, invalids, with moderate tuberculous infection, but with sufficient financial resources, may be encouraged to avail themselves of the advantages to be obtained in Colorado."—*Bonney.*

About one-fourth of the book is given to the valuable Climatic Charts of the United States, representing the general averages of some 8,000,000 observations by the Signal Service. These colored charts graphically portray by seasons the mean temperature, humidity, prevailing winds, and percentage of cloudiness, in other words the weather conditions, in all sections of the United States.

The agricultural, industrial, mineral, educational, climatic and scenic resources of the state are then set forth in glowing terms by various writers.

In conclusion, a brief description is given of the many sanatoria for the treatment of tuberculosis for which the state, particularly in the neighborhood of Denver and Colorado Springs, is so noted.

While evidence of local pride runs strongly throughout the book, it can well be recommended to the profession as a valuable reference book on matters pertaining to Colorado.

Arteriosclerosis: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment, by Louis M. Warfield, A. B., M. D., Instructor in Medicine, Washington University Medical Department; Physician to the Protestant Hospital; Adjunct Attending Physician to the Martha Parsons Hospital for Children, St. Louis, Mo. Formerly Medical House Officer at The Johns Hopkins Hospital, Baltimore, Md. Member St. Louis Medical Society, Missouri State Medical Society, and American Medical Association, etc. With an introduction by W. S. Thayer, M. D., Professor of Clinical Medicine, Johns Hopkins University. Eight original illustrations. C. V. Mosby Medical Book Co., St. Louis, Mo. 1908.

This little volume of 165 pages quite fully considers arteriosclerosis in its various relations. The anatomy and physiology of the circulatory system are briefly presented, as incidental to the subject. The influence of adrenalin and the chromaffin cells in maintaining arterial tone is noted as well as the experimental indications that adrenalin may produce lesions resembling to some extent those of arteriosclerosis in man. As to racial influence the disease is more frequent in the Negro than the Caucasian and the age of onset is much earlier. "The prophylaxis of arteriosclerosis is moderation in all the duties and pleasures of life." As to the action of alcohol as an etiologic factor, the author is inclined to agree with the former position according it a place as one of the most common causes of arterial disease, rather than with that of Cabot who has recently shown that alcohol has no effect in such production. As to treatment, the value of prophylaxis is especially emphasized and both hygienic and dietetic lines are amply considered. As to medicinal agents, he believes there is no doubt that the iodids are remedies of great value when blood-pressure is high and when headache and precordial pain are present. Vascular depressants are represented by the nitrites, of which he prefers the sodic salt, and aconite and veratrum viride. The latter should only be used when a trained assistant is at hand but aconite may be used for several weeks with but little risk. The book is a convenient and valuable monograph on the subject.

General Pathology, by Ernst Ziegler, Professor of Pathologic Anatomy and of General Pathology in the University of Freiburg in Breisgau. Translated from the eleventh revised German edition (Gustav Fischer, Jena, 1905). Edited and brought up-to-date by Aldred Scott Warthin, Ph. D., M. D., Professor of Pathology and Director of the Pathologic Laboratory in the University of Michigan, Ann Arbor, Michigan. Six hundred and four illustrations in black and in colors. William Wood & Co., New York. 1908.

The present revision has additional interest from the fact that it is of necessity the last which will have the personal supervision of the author. The book, both in its German and English editions, has been so long a standard that it scarcely needs review. The German edition is thoroughly revised to 1904 and Warthin has carried the revision to the present year, bringing in all the recent work on opsonins, etc. The translation preserves well the breadth of view of the author, and is of extreme value in placing the book in the hands of those who are unable to read the work in the original. The illustrations have been somewhat increased, and the whole book has been amplified.

Handbook of Suggestive Therapeutics, Applied Hypnotism, Psychic Science, by Henry S. Munro, M. D., Americus, Georgia. Second edition. C. V. Mosby Medical Book and Publishing Company, St. Louis, Mo., 1908.

This volume is in its second edition within a year. This is probably attributable to the fact that the subject is presented in a manner equally fascinating to the layman as well as the physician. The author is intensely enthusiastic and, better still, he has unbounded confidence in the efficacy of psychotherapeutic measures.

Suggestive therapeutics is as old as the hills. It may be traced as far back as the history of man permits. Consciously or unconsciously, it has been practised since the beginning of time. Only in recent years has it received from the medical profession the attention it deserves and had it not been that various cults, "isms" and other placebo influences have sprung up about us, psychic science would still be a latent asset. And so this little book has many features to commend it. It is a practical exposition of the subject and no one can peruse it without receiving inspiration and help. Psychotherapy is here to stay. It must, however, be controlled by the physician and its application always under his directon. Any attempt to disturb the relation of doctor and patient will, in most cases, prove disastrous.

The profession have had a prejudice, a fear, an antipathy towards the use of the psychologic factor in medicine, but as broad-minded men we must admit that human suffering can be alleviated and disease cured by conforming to this law. The achievements made in surgery, bacteriology and pathology have attracted the admiration of the world. But, while pathology and bacteriology can detect and surgery remove diseased parts, there are other elements which these agencies cannot reach. Surgeons with reputations for conservatism must become more flexible. It is well to do conservative surgery but patients must not be permitted to approach the operating table in a state of fear and uncertainty, but with the hope of cure strongly inculcated into their minds. The most successful physician and surgeon of the future will be the one that most strongly develops the "psychotherapeutic personality" and if our prestige as physicians is to be retained, we must cultivate a better understanding of the technic and practical application of this form of treatment. The book is written in an attractive style, imparting reliable information and stimulating one's interest in this rapidly advancing branch of medicine. Such a volume would grace any medical library.

Intestinal Auto-Intoxication, by A. Combe, M. D., Professor of Clinical Pediatry at the University of Lausanne (Switzerland); Chief of Clinic for Children's Diseases; President of the Swiss Pediatric Society; together with an Appendix on the Lactic Ferments with particular reference to their application in Intestinal Therapeutics, by Albert Fournier, formerly Demonstrator at La Sorbonne, Paris. Only authorized English adaptation, by William Gaynor States, M. D., Cinical Assistant Rectal and Intestinal Diseases, New York Polyclinic; Member of American Medical Association; Member of State and County Medical Society of New York, West Side Clinical Society, etc., with 18 figures in the text, 4 of which are colored. Rebman Company, 1123 Broadway, New York.

The scope of this work is limited by the author to a discussion of intoxications due to those poisons formed in the gastro-intestinal tract through the influence of the vital processes of the organism. Under the term "vital processes" are included not only the so-called physiologic agents, such as digestive enzymes, but also the various microbes which normally find their habitat in the intestine. Toxinemias by infection such as in scarlatina, toxinemias from absorption as from a tuberculous cavity, and alimentary intoxications due to the ingestion of tainted foods, etc., are not considered. In fact, the subject practically resolves itself into a consideration of the effects of the harmful proteolytic bacteria, which are responsible for the formation of toxic substances, and of the antagonistic action of the beneficent lactic acid-forming organisms.

The normal digestion by the proteolytic enzymes is first reviewed and compared with that effected by the proteolytic bacteria which carry the process farther than do the enzymes with the formation of certain toxic bodies, such as ptomaines and derivatives of the oxyacid, phenol and indoxyl groups; these substances represent not only a destruction and actual waste of amino derivatives of the protein molecule, which would be of value to the organism, but they are actually harmful in the extreme. The means of defence against these poisons, the antitoxic functions of the organism are described, and include not only the liver and other antitoxic glands, but also the factors which limit intestinal putrefaction, such as diet, rate of absorption, action of digestive juices and the antagonistic action of other types of bacteria.

The lesions caused by the intoxication and the actual causes which contribute to the increased production of intestinal toxins are then discussed.

The symptomatology in its varied manifestations is well presented and under this heading, as well as in the chapter on diagnosis, great stress is laid upon the urinary findings which furnish the most important criterion as to the existence of an auto-intoxication. The various coefficients for comparing the excretion of different bodies in the urine and their technic are fully detailed.

The chapter on treatment explains the modification of the intestinal culture medium, so as to inhibit the action of the proteolytic bacteria by the giving of a lactofarinaceous diet, by the introduction into the digestive tract of antagonistic bacteria, such as the lactic acid organisms, or by the administration of bacterial ferments, by the use of germicidal medicines, and by intestinal lavage.

The far-reaching effect and oftentimes obscure manifestations of digestive auto-intoxication, even in the absence of symptoms referable by the patient to the digestive tract, make the subject one of great importance to practitioners in all fields. The arrangement of the work in orderly form under headings and subheadings, with occasional summaries, furnishes a very convincing and logical argument. The references are exceedingly numerous although, as is common in foreign works, allusions to work done in this country are noticeable by their entire omission.

Gonorrhea in Women, by Palmer Findley, M. D., Professor of Gynecology in the College of Medicine of the University of Nebraska, Omaha; Gynecologist to the Clarkson Memorial Hospital and Wise Memorial Hospital; Fellow of the American Gynecological Society. C. V. Mosby Medical Book Company, St. Louis, Mo., 1908.

This monograph, as the preface states, is intended to present to the profession the subject of gonorrhea in the female in its entirety so that its supreme importance may be realized. The subject is handled briefly but in a convincing manner. The limits of the book do not permit of exhaustive details or of an extended review of the literature. As a guide to diagnosis and treatment, the work is decidedly of value. Stress is laid upon the great importance of latent infections and their relation to those puerperal infections which occasionally occur quite unexpectedly, and even when a most careful aseptic technic has been observed. The sociologic aspects are reviewed and the necessity of publicity as to the extent of this disease, and its terrible results in women in particular, are emphasized. Since regulation and suppression of prostitution have proved useless in diminishing the prevalence of gonorrhea, education of the young in sexual matters, public knowledge of the existence of the disease in those affected, and the liberation of the physician from the bonds of professional secrecy in such matters are suggested as the only methods of lessening the spread of the disease. Operative procedures are not discussed, nor is this necessary in a work of this nature, intended, as it is, more to indicate how best to limit the spread of the disease by prophylactic measures and early treatment than to enter at length into a discussion of the unusual complications or of surgical measures necessary in advanced cases.

Obstetrics for Nurses. By Joseph B. DeLee, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. Third Revised Edition. 12 mo. of 512 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $2.50 net.

This book, which is written especially for the use of nurses, is so arranged as to serve as a textbook of obstetrics and at the same time cover in a most practical manner the subject of obstetrical nursing. In the present edition a few changes, chiefly additions, have been made which make the work thoroughly in accord with the present day methods, although it may be said that few changes were necessary.

As a textbook on obstetrics it is very complete and concise and compares very favorably with many of the smaller textbooks written for medical students. As a work on obstetrical nursing it contains a wealth of most practical suggestions for the care of the patient which are not found in the usual works on obstetrics, but which are equally useful for the physician and nurse.

In considering the obstetrical operations the author describes an operation in detail and then takes up the duties of the nurse in preparing for and during this particular operation. The directions for the after care are especially thorough. In the treatment of mastitis a notable addition in the present edition is a detailed description of Bier's method. Considerable space is given to the care of the child during the nursing period and a special chapter devoted to the care of premature infants. In the chapter on the care of the child the latest ideas of infant feeding are mentioned and a practical method for milk modification given. The author clings to the old plan of feeding at frequent intervals.

Taken as a whole the work is a most valuable one and, although intended for nurses, contains so many useful points in obstetrical nursing that every physician practising obstetrics would do well to read it.

Practical Points in Anesthesia. By Frederick-Emil Neef, B. S., B. L., M. L., M. D., New York. Price Semi-De Luxe-Cloth 60 cents, post paid. Library. De Luxe Ooze Flexible leather $1.50 post paid. Surgery Publishing Co., 92 William St., N. Y., U. S. A.

A very useful aid to students or to those who are giving anesthetics only occasionally and are hence not very familiar with the behavior of the patient under the anesthetic. Some very practical points are given, especially as to the avoidance of the unfavorable results that follow "crowding" of the anesthetic in the early stages of anesthesia. The estimation of the different "planes of anesthesia" in which the patient should be held for various procedures is also detailed. The choice of different anesthetics in different conditions is outlined. The author employs usually chloroform, ether, or a combination of the two with alcohol—anesthol.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, M. D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Octavo of 534 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.00 net.

Among the less voluminous works on dermatology this ought to take a prominent place. The commoner and more important diseases of the skin are given as full consideration as is desirable in a work for ready reference, while rare and important affections are generally dismissed with a rather brief description.

The acute eruptive fevers receive much greater space and attention than is usually given them in works of this character and there are also excellent descriptions of the various eruptions which at times accompany such diseases as typhoid and typhus fevers, influenza, malaria, dengue, epidermic cerebrospinal meningitis, miliary fever, rheumatic fever and others. The serum and drug eruptions are well described. The illustrations are numerous and excellent.

The section on actinotherapy, radiotherapy and the therapeutic use of radium is clear and in the compass of about a dozen pages very accurately states our present knowledge of these subjects. The discussion of treatment throughout the volume is admirable, the newer procedures which have proved their value are not neglected. There is a good index.

Medical News

F. E. Cutler has opened offices at 936 Rose Building.

H. G. Sherman, of 736 Rose Building, has permanently located his residence in Cleveland.

O. R. Avison, of the L. H. Severance Hospital of Seoul, Korea, gave an address upon his work in Korea at the Miles Park Presbyterian Church, November 27, 1908.

The Cleveland Medical Library Whist Club held its first meeting at the Library, Wednesday, November 25. About 60 members were present. It was decided to hold their meetings at regular intervals hereafter.

The H. K. Cushing Laboratory of Experimental Medicine of the W. R. U. Medical College was dedicated with appropriate ceremonies on November 20, 1908. Representatives from a number of out of town Universities were present. Among these Alexander McPhedran, of Toronto, and William T. Councilman, of Harvard, gave short addresses. Wm. H. Welch, of Johns Hopkins Hospital, Baltimore, delivered a special address. A luncheon to the visitors and guests preceded the ceremonies, and an inspection of the new building followed.

Lake County Medical Society held its fifty-fourth regular meeting on Monday, November 2, 1908, at the Parmly Hotel, Painesville, Ohio. Program: (1) Presentation of Cases; (2) Reports from Committees on Nominations, and Public Health and Legislation; (3) Miscellaneous Business—Letters from Drs Upham and McCormack; (4) Surgical Aspects of Exophthalmic Goiter, by R. H. Birge, Cleveland.

Stark County Medical Society met at Canton, Ohio, Tuesday, November 17, 1908. The program was as follows: (1) ''Adenoids in General Practice,'' M. C. Foulks, Canton; (2) ''Complete Removal of the Pharyngeal and Faucial Tonsils,'' G. L. King, Alliance; (3) ''Some Office Cases,'' J. A. Rheil, Malvern; (4) ''The Neglected Drugs''—A Plea for the Reestablishment of Formerly Accepted Therapeutic Agents, H. A. March, Canton; (5) Lumbago, L. B. Santee, Marlboro; (6) Anomalous Pregnancies, C. P. Wolf, Massillon.

St. Alexis Hospital Alumni Association met at the Hollenden, Thursday, November 5, 1908. Program: Report of Cases of (1) Typhoidal Myocarditis (2) Cervical Adenitis, T. J. Calkins; Report of Case of Acute Mania, George M. O'Neil; Certain Uncommon Forms of Abdominal Pain, with Report of Cases, B. Peskind; The Significance of Acute Abdominal Pains, W. J. Manning.

The members of the Charity Hospital Alumni Association were entertained at a banquet given by the Sisters of the Hospital on November 10th.

The Lakeside Hospital Medical Society held its thirty-second meeting on Wednesday, November 26, 1908. Program: 1. Presentation of 11 Cases Illustrative of Operative Results in Deformities of Infantile Paralysis, H. O. Feiss. 2. Presentation of Cases of Acute Esophagitis with Clinical History, J. MacLachlan. 3. A Case of Acute Hemorrhagic Nephritis, Associated with Gall-Stones, Clearing up After Operation,

M. Tweedie. 4. Demonstration of Gynecologic Specimens with Clinical History of Two Cases, F. C. Hall. 5. Presentation of Pathologic Specimens, (a) A Case of Mediastinal Lymphosarcoma. (b) A Case of Perforated Appendix in Typhoid Fever. (c) A Dermoid Cyst of Ovary. (d) A case of Miliary Tuberculosis, S. L. Haas.

S. W. Kelley's new book upon Surgical Diseases of Children will appear shortly from the press of E. B. Treat & Co., of New York.

Deaths

Chas. L. Hane, of Florida, Ohio, died October 25, aged 39.

Otto W. Fennel, of Cincinnati, died October 23, aged 47.

Nathan C. Gunder, of Columbus, died October 22, aged 76.

Wm. W. Bickett, of Columbus, died October 22.

Chas. R. Bradfield, of Mt. Vernon, died October 14, aged 62.

John D. Timmerman, of Leipsic, Ohio, died November 4, aged 69.

Joseph Wilson, of Youngstown, died October 27, aged 72.

Geo. W. Bowen, of Toledo, died November 4, aged 70.

C. W. Gatch, of Milford, died November 5, aged 52.

Geo. H. Bean, of Rutland, died November 2, aged 67.

Carman C. Stokes, of Rushsylvania, died November 9, aged 59.

Philander P. Outland, of Zanesville, died November 5, aged 57.

Geo. W. Root, of Alliance, died November 7, aged 27.

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